Medical
MAR 23 1927

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THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—14TH YEAR. SYDNEY: SATURDAY, FEBRUARY 19, 1927. No. 8.

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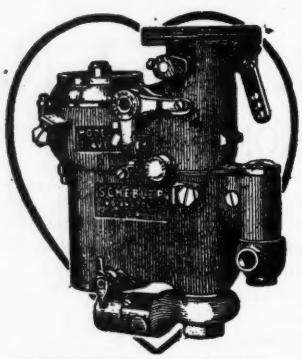

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MENTAL DEFICIENCY: ITS MENTAL AND PHYSICAL CHARACTERISTICS.

By JOHN BOSTOCK, M.B., B.S. (London), D.P.M.,

Medical Superintendent, Mental Hospital, Newcastle; Honorary Physician, Neurological and Psychiatric Clinic, Newcastle General Hospital, New South Wales.

THE findings in mental deficiency in a mental hospital may be regarded as the *débris* in the shop of a potter called Nature who has cast aside the vessels which possess flaws. Moreover since Nature is indeed a master tradesman, there will be found here and there experimental practise specimens which, though failing to prove their utility, demonstrate by their line and fashion the secrets of the fabricator.

In very truth such a collection would prove a treasure trove to the expert in pottery and in the same way he who regards mental deficients as throw-outs and experiments in the making of human life, will approach them on better basis of truth than if they are considered to be mere social rubbish. This is one of the reasons incidentally why defectives should be segregated in an institution at such a distance from the medical school that students could come either to study or to do research. At the present time priceless material is being wasted.

The hall mark of mental deficiency is incompleteness and this is tantamount to saying that the ament lacks the crown of human attributes, to wit wisdom on the one hand and coordinated strength on the other. Even the brighest specimens require careful handling by society in order to produce a modicum of performance, whether mental or physical, and this can be done only by studying the peculiarities of each particular case. Contrary to general opinion there is less similarity than in normal children and rule of thumb methods should be a thing of the past.

Sensory and Mental Peculiarities.

I trust that I have made it clear that there is no standard defective, there may be a loss in one organ and a gain in another or the situation may be reversed. Gross physical deformity may be associated with fair mentality or the body may show few blemishes and the mind be a blank, but as a rule the two run together. Classification may be undertaken on the basis of mind, the idiot with the mental

age corresponding to that of a normal child of one to two is unable to guard himself from physical dangers. The imbecile whose capacity ranges from the mental ages of three to seven, has his utility confined to the simplest of tasks, whereas in the moron or feeble-minded development may take the place of a child of eight to twelve and, though ability to do fairly complicated work is present, the ability to plan or earn a living without supervision is lacking.

Another method depends upon structure and cause. Both have their uses, but in actual practice there is found to be too great overlapping, the varieties run into each other and the student acquires the impression that every conceivable psycho-physical disposition has been tried by Nature, the efforts of the master potter to produce his perfect vessel!

Sensation.

It is apparent that the fundamental process upon which the mind is built is sensation. Changes in the environment are thereby noted and made apparent. A normal child one day old can differentiate between sour and sweet taste, can probably distinguish the smell of its mother's milk, notice the difference between light and shade, is able to hear. Of other sensations pain, heat and cold and touch, though present, are not perfect for some months. Muscle-tendon-joint sense appears as balance and coordination are gained. Then there are so-called organic sensations in the alimentary and excretory systems. Hunger and thirst are included in these and show themselves at a very early age.

The tendency for all sensations is retardation.

CASE I.—O.A.M., *ætatis* fourteen years, was admitted on February 11, 1921. He is an idiot unable to walk or fend for himself. Exhibition of strong ammonia to the nose causes no discomfort and he is content to eat quinine or sugar indiscriminately. Pinprick is pleasurable rather than obnoxious. It is an existence which has hardly more contact with ordinary human life than befalls to the lot of a cabbage.

Cerebration and Consciousness.

It is supposed that during evolution the original state of consciousness was a simple awareness, impression of something there and no more. There is no combination of present sensations and memories to form a composite fabric such as takes place in our own mind. We might describe this type of consciousness as a dim blur, without differentiation or subtlety. Emotion, the great vivifier of thought, is restricted to hunger and pain and even so is limited in intensity. It is a formless, meaningless intelligence, lower than that of many animals, but if we reflect critically on this degradation of the soul, in justice it may be noticed that the great sorrows of mankind pass it by.

The above is a description of the consciousness of such an idiot as O.A.M., it remains to say something of the higher forms.

It is customary to split up the process of cerebration of man into a number of processes, realization of an object or perception, its memory image or ideation, the focussing of the mind or attention, cross indexing or association of ideas, the ledger or memory.

The various intelligence tests, such as the Binet-Simon, show undoubtedly that there is to a greater or less extent a retardation of all these faculties in mental deficiency; as a result those higher attributes of the mind which must depend upon the possession of a good basis of elementary thought, to wit, judgement, reason and foresight, are absent. They lack wisdom and the sense of responsibility is missing. One of my first ideas with regard to this hospital was to introduce monitors or prefects; one might as well search for snowballs in the streets of Newcastle, they are unobtainable. Nor is it remarkable when as by the following list it will be noticed the highest mental age of any of two hundred and fifty children is twelve and unfortunately many are so lacking in the power of attention that, though intellectually they may be capable of some fairly complicated task, they are so "scatter brained" as to be nearly useless.

The following case is taken at random and I have given *verbatim* a few of his responses to questions which should have been correctly answered by a much younger boy.

These will serve to show the mental retardation.

CASE II.—F.G.T., *ætatis* eleven years and ten months, is a pleasant, attentive, fairly biddable little moron of good appearance. Cursory examination would make him to be more intelligent than he really is.

His vocabulary is weak, he gives only six out of thirty definitions and cannot say the meaning of such simple words as curse, outward, southern. There is a failure to appreciate absurdities and an observation that "Yesterday the police found a girl cut into eighteen pieces, they believe she killed herself" was received as a commonplace.

Asked to repeat a few simple sentences about a terrific fire in Glasgow, the only thing he could remember was the date! On being demanded what he ought to do before beginning something important, his wisdom told him not to do it if it was wrong!

Mathematics are lamentably weak and his repetition of the numbers 5, 4, 7, 12 was 521746. He could not even do the nine year old test of repeating four numbers backward. The simplicity of his equipment in ideas and their association could not be better illustrated than by mentioning that he was unable to give three rhymes for the word "day."

He has been found by this method (Binet-Simon-Terman Revision) to have the mind of a boy of seven years and ten months.

He has therefore a four years' retardation. The intelligence quotient, usually written I.Q., is the ratio between mental age and real age; in his case 66. (The decimal point is usually omitted.)

Only the children above the idiot stage are educatable and a recent survey by the Binet-Simon method of all our school children gives the following result. There is a 50% retardation.

Roughly only a third of our total school age population will profit by education, the rest are either too young or in the majority of cases too stupid.

Group Tested	Number.	Average Age.	Average Mental Age.	Average Intelligence Quotient.
School Boys ..	31	12 years	5 years 10 months	49·8
School Girls ..	35	12 years 4 months	6 years 2 months	50

Concerning temperament, the average ament is sanguine, a fortunate circumstance both for himself and his physician. A hospital for defectives is a pleasant place for all concerned.

It will be asked if in "idiots savants" there is not a high intellectual capacity associated with mental deficiency and it is true that certain individuals have by concentrating all their energies on one particular line reached very remarkable attainment, nevertheless as in the famous case of J. H. Pullen, the genius of Earlswood Asylum whose handicrafts were truly noteworthy, they lack wisdom. Not infrequently the "bent" is in the direction of remembering incidents as an example from the hospital will show.

CASE III.—J.W. was admitted on December 31, 1879. His real age is fifty-eight, but the mental age is only eight years. Simple and childish and though hardly able to read, he has an extraordinary memory for dates and events. He can remember the dates on which every Superintendent came to the hospital during forty-six years and can say on what day any date fell during the past five years. His method is to memorize the date of Easter Sunday and calculate forwards or backwards.

Speech is rightly regarded as one of the highest faculties we possess. Defects are extraordinarily frequent in defectives and not infrequently children are brought for treatment specifically to improve their powers of elocution. It may be two, three, four or even more years before the child utters a word.

CASE IV.—F.B.V., *ætatis* nine years, was admitted on October 12, 1926. He is a typical Mongolian imbecile. He is able to do simple tasks and errands; his mother brought him to hospital chiefly in order to see if he could be made to speak. His articulation is defective and his vocabulary limited to "Daddy," "Mamma" and "Ta."

We have quite a sprinkling of deaf mutes in all classes of deficiency. It is peculiarly difficult to train them or even to assess their native intelligence. As an example of how they need special care I have seen the nurse in charge spend an hour in trying to find why one of them was crying, finally a particular doll was produced and the howls ceased!

CASE V.—R.G., *ætatis* sixteen years, was admitted on October 23, 1919. He is skilful at handwork, plays cricket with zest, but is irritable. He has considerable native intelligence, but his deaf-mutism makes progress very slow.

Behaviour.

Nothing has been said so far as to will or volition and I am approaching it under the behaviouristic view point. In few cases is a philosophical detachment of the intellect so pronounced that one can commence to think of free will; certainly not in amentia! Every activity or behaviour is a response to a situation or a set of situations in which all the previous experiences, intellectual, emotional and sensational, are involved.

To take a concrete instance, a man's reason for marrying a particular girl would depend not as he fondly thinks upon abstract love, but upon a variety of factors including the instincts of reproduction, acquisition, self-regarding, also suggestion, imitation, experience of mother, sisters and other girls, sensations of eroticism and mayhap of digestion; indeed could one trace the sequences leading to this particular behaviour, there would be a review of the entire life history of the individual. No wonder therefore the end responses are faulty in mental deficiency, since all the factors are abnormal.

The idiot cannot even react to physical dangers, the imbecile is able to perform the simplest tasks and even the moron requires constant supervision. Characteristically accepting situations without criticism and content to leave the planning to others, they are butts of circumstances and the prey of the scheming. The practical joker considers them his personal property and were it not for institutional care, their life would be intolerable. Two examples may be cited, the first showing gullibility, the second the acceptance with pleasure of a position of drudgery which would be unbearable to a normal individual.

CASE VI.—W.W., *ætatis* fifty-six years, has a mental age of ten. He has a mania for clocks and electric batteries, which the townspeople foist on him and though he considers they are priceless works of art, are really rubbish. His beliefs are a constant source of amusement to others.

CASE VII.—T.W.H. was admitted on January 13, 1904. His age is thirty-six. A fully grown imbecile, he is content to scrub, look after babies, do menial work all day and every day, considers it a delectable existence and expresses perfect happiness.

Unfortunately for the ament society is so intricately and delicately organized that failure to behave normally may lead to antisocial action and the law steps in. A youthful defective may be brought under control for playing truant, pilfering, indecent behaviour and the like. As he grows older he continues in his ways. His conduct is the result of lack of power to inhibit stray impulses, for example to appropriate any article that he sees, or a woman to offer her person to the first comer. Perchance a desire to see a fire may lead to arson. In others faulty environment and upbringing are at the root of the trouble, as is shown by the fact that in an institution incorrigible young reprobates usually become moderately well behaved.

CASE VIII.—R.S.B., *ætatis* twenty-eight years, was admitted on September 14, 1916. He is a moron with a history of roaming about the country day and night and sleeping under houses; he is now a trusted ward worker.

CASE IX.—B.F., *ætatis* fifteen years, was admitted on December 20, 1921. Her mental age is ten. She was admitted for sexual perversion and interference with babies and is now a leader at school and shows no sign of her previous practices.

The impulse to commit cruelty (sadism) is occasionally present in a very pure form.

Case X.—O.E.B., *ætatis* ten, was admitted on May 1, 1921. She is an idiot, faulty in habits, has no intelligence and her only interest in life is biting other children. It is noteworthy she has a strong infection by *Ascaris lumbricoides*, which may have something to do with her peculiarities.

The yielding tendency becomes a very serious problem in regard to girls. Some of our patients are not unattractive physically, but so great is the risk of a pregnancy, they must remain in an institution. To my mind sterilization should be compulsory in some of these girls who are permitted to live outside an institution and if precautions

FIGURE I.
Hydrocephaly. The circumference of the skull at the frontal eminence is sixty-five centimetres (twenty-six inches). The age of the patient is ten years.

were taken, they need never know why the operation had been performed.

Case XI.—H.T., *ætatis* twenty, has a mental age of eight years. She is an attractive, well built girl who works in the wards. She is fond of the opposite sex, but is so feebleminded that intercourse would be a tragedy, yet inevitable if she were at liberty.

A moral imbecile has been defined as one who has (i.) a permanent mental defect *plus* (ii.) strong, vicious or criminal propensities and is (iii.) undeterred by punishment (iv.) from an early age. Every form of crime from murder to arson may be committed, almost invariably bearing a distinguishing mark firstly of stupid lack of moral sense, secondly lack of common sense or wisdom, both of which lead to detection. The scholastic record, intelligence tests and observation of conduct should clear up any diagnosis of feeble-mindedness and for the benefit of society the subject can be placed in a suitable institution. The nearest approach to a case of this kind, a type for which we do not cater, is the following:

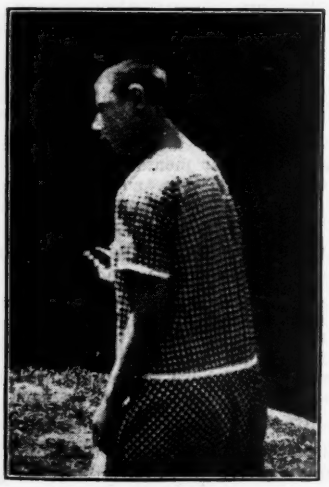

FIGURE II.
Microcephaly. The circumference of the skull is thirty-five centimetres (fourteen inches). The age of the patient is ten years.

Case XII.—M.R.S., was admitted on April 4, 1925, at the age of thirteen. His mental age was seven years. He is incorrigibly wilful and disobedient, he persists in coprolalia with sex allusions, *et cetera*, and shows little if any improvement. Neither reward nor punishment has any influence.

The vicious moron or imbecile is fortunately very much in the minority.

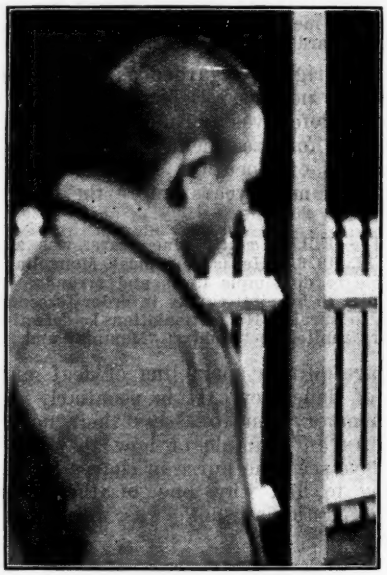

FIGURE III.
A Rounded Mongolian Head. The boy's age is seventeen years.

One would imagine from the discussion which occurs in the daily papers when one is discovered, that they are so common as to form a terrible menace to society. Happily this is an exaggeration.

Physical Characters.

The searcher after psycho-physical parallelism finds in amentia some of his most remarkable examples, everyone has seen illustrations of the mindless dwarfed cretin who thanks to thyreoid extract broadens both his intelligence and physique.

Cretinism is a rarity, but throughout the whole gamut of amentia one tends to discover a physical retardation on all fours with the mental and it is possible to create standards of development based on measurements of normal children, in the same

way as those of Binet-Simon for the mind. The one originated by Smedley depends on the height standing and sitting, weight, right and left grip and vital capacity. In a doubtful case such findings would be of distinct utility and in every case of mental deficiency a series of anthropometric measurements should be taken as a routine.

More specific data as to brain retardation can be obtained by measuring the skull. One may be content to find the distance from certain fixed points or, as in the method of Professor Berry, of Melbourne, estimate the cubic capacity of the brain.

Quite apart from the foregoing generalizations the physique is fascinating when studied according to the symbolism of our potter's backyard. The variations are remarkable and would repay more than a cursory glance by the student of any speciality.

The cranium may be large as in hydrocephaly, small as in microcephaly.

FIGURE IV.
The Box-shaped Head of Hypertrophic Cerebral Sclerosis. Paralysis of the left arm is present and the arm is held in a characteristic position. The circumference of the head at the superciliary ridges is 57·5 centimetres (twenty-two and a half inches) and at the frontal eminences fifty-five centimetres (twenty-two inches)

A scaphocephalic or keel-like variety is recorded, or it may be rounded as in mongolism, box shaped as in cerebral sclerosis, tower shaped as in oxycephaly. Asymmetry is not uncommon. These conditions are exemplified in the accompanying illustrations. (Figs. I. to IV.)

Mr. B. W. Champion, our dental surgeon, has drawn my attention to two of his very interesting models. The first is taken from the mouth of a child who constantly bit his own wrist, thereby gradually forcing the incisors into a horizontal position. Idiots and imbeciles have many vices of this nature; they suck their tongue or lower lip and may put a finger or even the whole hand into their mouth, habits which lead to considerable deformity and

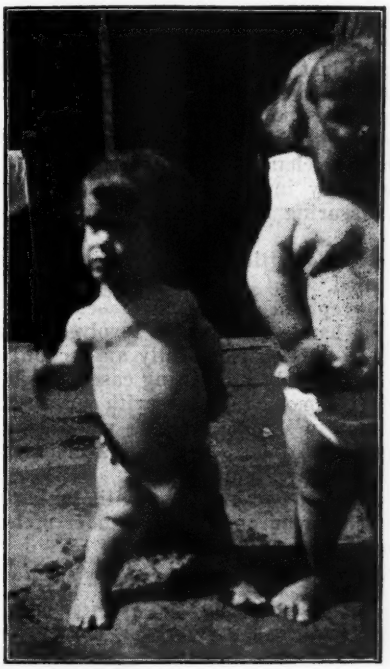

FIGURE V.
Two Little Achondroplasiacs. Note the short arm and thigh.

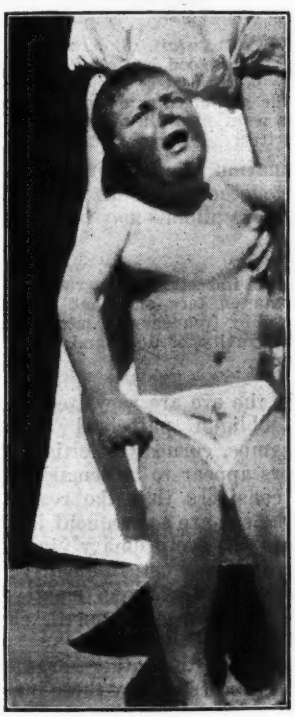

FIGURE VI.
Dyspituitarism. Note the facial and limb deformities.

are difficult to treat. The second model illustrates gross abnormality in the position of the teeth, the molars and last premolar being so out of line as to be transverse instead of in the normal fore and aft position.

Dental caries is very prevalent in aments. The palate may be characteristically saddle or V shaped. The jaws vary in size. The tongue is frequently large. Fissuring takes place in Mongols after the fourth year.

Of bony deformities, absence or increase of digits are recorded.

Two oxycephalics shows an associated syndactylism of the hands, which also involves the feet. It is hoped to publish more fully an account of these rare and extremely interesting cases. A short little finger is common, together with universal laxity of ligaments in Mongolism. We possess two achondroplines whose short legs and arms make recognition easy (see Figure V.).

A pituitary defect due to syphilis taking the form of Fröhlich's syndrome is a reminder of how endocrine organs may be affected.

Case XIII.—H.E.H., *ætatis* fifteen, was admitted on May 30, 1925. His blood has yielded a reaction to the Wassermann test. He is feeble minded. His mental age is eight years and two months. He is grossly fat and has not developed secondary sexual characteristics.

There are also in the hospital unclassified defectives, one of whom has a pituitary abnormality among other things and possesses limbs of fantastic coarseness and a face of bizarre appearance (see Figure VI.).

Case XIV.—W.A.C., *ætatis* nine, was admitted on February 15, 1921. His blood has not reacted to the Wassermann test. He is an idiot of low grade and cannot walk. He has only the glimmerings of intelligence. In addition to the features mentioned pin point pupils are present, the result of old iritis.

The combination of adenomata of the face and in the kidney together with mental defect—the syndrome known as epiloia—may be mentioned in passing.

Case XV.—M.D.F., *ætatis* nine, was admitted on April 13, 1926. She is an imbecile of low grade. She has numerous small adenomata on face and that the kidneys are involved is shown by frequency of micturition. The urine has a specific gravity of 1020 and there is a trace of albumin present.

The Ear.

Changes in the eye are very frequent and include epicanthus, oblique palpebral fissure, speckled irides, nystagmus, corneal opacities, *et cetera*. Refractive errors appear to be remarkably frequent.

Tredgold considers that the reason why abnormalities of the ear are so frequent is that the organ is in a state of evolutionary instability. The external ear is the most frequently involved and the variations include large, small and adherent lobule, whole ear large or small, changes in the helix, *et cetera*.

Changes in all the other organs have been described and needless to say these include the brain itself, which may have sclerosis, altered cortical pattern, cavity formation, hemiatrophy, absence of *corpus callosum*, fornix, optic thalamus, *et cetera*. These changes can be diagnosed usually only in the *post mortem* room. Chorea, athetoid, nodding and other kinds of associated movements are quite common and would repay investigation. Paralyses, hemiplegias, paraplegias are by no means rarities.

Pulmonary stenosis and congenital heart conditions are sometimes serious complications. It is extremely common to discover cyanosis of the extremities, especially in idiots. The circulation is poor, a finding which accounts for their tendency to die young. Bronchitis and pneumonia are also common accompaniments.

Conclusions.

It is profitable to regard mental defectives as throw outs and experiments in the making of human life; as the mental and physical changes run parallel, the study of amentia is worth while for every branch of medicine.

The mental hall mark is retardation and lack of wisdom; the physical, lack of full stature and coordinated strength.

There is no standard mental defective, since gross variations are present.

One third of total school age population at the Mental Hospital, Newcastle, repays education. They react well to institutional care and are almost invariably contented. Sterilization in certain picked cases should be allowed.

Moral imbeciles are definitely rare.

Acknowledgement.

I am indebted to my predecessor, Dr. Nowland, for the use I have made of his very able case notes, to Charge Nurse H. Belcher for kindly taking the photographs, also to Dr. C. A. Hogg, Director-General of Mental Hospitals, New South Wales, for permission to publish.

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THE TREATMENT OF PERITONITIS.[1]

By W. R. GROVES, M.D., B.S. (Melb.),
Kyneton, Victoria.

The treatment of peritonitis is a subject that has been of particular interest to me. In the MEDICAL JOURNAL OF AUSTRALIA for September 10, 1921, I reported the recovery of two extremely critical cases of acute generalized peritonitis under a method of treatment that was at that time new and almost the antithesis of the recognized treatment of the day. The object of the treatment was based upon the fundamental principle of keeping the inflamed part, the peritoneum, at rest, to which end bowel peristalsis was reduced to a minimum by allowing no

[1] Read at a meeting of the Victorian Branch of the British Medical Association on October 23, 1926.

nourishment by the mouth and giving morphine; whereas the customary practice at that time was to use every possible means to stimulate bowel movement with the idea of obviating the establishment of the condition called ileus which was regarded as an almost hopeless complication.

Two years previously I had read with interest the report of twenty-one consecutive cases of acute diffuse peritonitis treated by this new method with only one death. This appeared in the *British Medical Journal* of September 20, 1919, the author being Major Basil Hughes, D.S.O., F.R.C.S.

I had become so disgusted with the poor results obtained by the customary treatment and particularly with the suffering of the patients who were not allowed the relief of morphine for fear of inducing ileus, that I decided to employ Major Hughes's method in the cases mentioned and with the happiest results. Since then I and my colleagues in Kyneton have treated all forms of acute peritonitis in this way with such satisfaction that I feel it should be worth while discussing it here to-night.

I know that this method of treatment is gradually becoming more common practice, but I am sure its value deserves wider recognition. I find that it is more or less new to or imperfectly understood by the graduates who come to us as residents at the Kyneton Hospital and a fair search has revealed but infrequent reference to it in even recent surgical books. It is practically not mentioned in the recent editions of the text books best known to us out here. In substantiation of these statements I will quote from several surgical works at the conclusion of this paper.

I am convinced from our very favourable experience of it that this method of treatment should become accepted practice, just as it is accepted practice to operate in cases of acute appendicitis immediately a diagnosis is made. And the more so because peritonitis is a condition that every one of us meets with and the method of treatment is simple, entailing a minimum of work for both doctors and nurses.

I really believe that I am justified in claiming that with this treatment properly carried out very few patients with peritonitis will be lost and there is this further in its favour, patients whose conditions are necessarily fatal, will have their sufferings reduced to a minimum. If on the other hand we have to withhold morphine, peritonitis is a most painful affection and the administration of purgatives, enemata, pituitrin, eserine *et cetera,* to induce bowel action only add to the patient's distress, to say nothing of the stomach washings and subcutaneous injections of saline solution, which these patients often require. These last measures, when required, are barely appreciated under the morphine treatment. Whereas we used to watch the increasing distension in these cases of peritonitis in fear and trembling, we now regard it with equanimity, looking upon it as evidence of Nature's means of providing rest for the inflamed tissues by inhibiting peristalsis—by splinting the bowels so to speak. Our treatment comprises such measures as will preserve and aid this inhibition. In patients treated thus subsequent to operation the distension increases till sometimes one would think that something must be done to relieve it. If, however, the treatment is adhered to, about the fifth day close observation will reveal a slight slackening of the tension in the epigastrium, quite probably accompanied by the passage of some flatus. This is to be regarded as evidence of the commencement of resolution and almost certainly the bowels will act within twenty-four hours. Then the flanks will become softer. The morphine will be continued, being repeated whenever the patient becomes restless or appears to feel pain, but once the bowels act something more than water is allowed by the mouth. When resolution has set in an enema might do no harm, but I am satisfied to leave well alone and the bowels always act naturally. The distension gradually clears up, remaining longest about the region of the original focus, the last part apparently to recover.

In carrying out this treatment water in small quantities frequently is allowed by mouth if no vomiting occurs, and it is rather surprising to note how little vomiting does occur in cases treated in this way. No nourishment is permitted until resolution sets in.

Rest, both general and local is maintained, by repeated morphine injections. Crile has advocated pushing the morphine till the respirations are considerably slowed, but we have not found it necessary to go so far. Our working rule is to give hypodermic injections of morphine 7·5 milligrammes (grain one-eighth) with atropine 0·27 milligramme (one two hundred and fortieth of a grain) and strychnine 1·6 milligrammes (one fortieth of a grain) at first every four hours, the interval being varied later according to the condition of the patient as regards comfort. He is never allowed to be in pain or to become restless. In fact he drowses away through a grave illness that without morphine is one of the most distressing and painful of conditions. A factor largely determining the favourable results obtained by this treatment is the action of morphine in shielding the sensorium from the depressing stimuli from pain, vomiting *et cetera.*

Fowler's position is maintained during the early days of treatment and saline solution is administered more or less according to the presence or absence of vomiting, glucose being added at times.

The focus of infection is removed if possible. In very bad cases with much distension and the patient in low condition it is advisable to be content with a small hypogastric incision, under local anæsthesia with narcosis, in order to pass a soft drainage tube to the floor of the pelvis, disregarding the focus. In one of the cases which I reported in 1921, treatment was carried out in this way. In another a patient with generalising peritonitis was operated upon under general anæsthesia, no focus of infection could be found and no doubt the prolonged search made for it was harmful because the periton-

itis quickly became generalized and the patient extremely ill with dark brown vomit for four days necessitating stomach washings.

The question of drainage in the various stages of peritonitis affords much opportunity for discussion. I suppose we are all employing drainage less and less. I can remember the time when the possibility of having in the slightest degree soiled the peritoneum during operation, was an indication for drainage. Now we have greater faith in the ability of the peritoneum to resist infection—in fact, greater than we have in the resistance of the subcutaneous tissues. The question is how far can we rely upon the power of the peritoneum to deal with infection and have we any guide to help us in determining the point? Granting that at present we would all agree it to be necessary to drain when the original focus is not removed and when pus, except in very small amounts, is present and again when generalized peritonitis is fully established, a condition where the inflammatory changes will have at least in some areas reached the purulent stage, there remain the generalizing and unlocalized focal cases with free inodourous fluid to consider. Note that I say inodourous fluid for I think offensive fluid is a sure indication for drainage. In these cases with inodorous fluid, might not the decision for or against drainage rest on the extent of the inflammation as evidenced by peritoneal redness and bowel distension, omitting drainage where it is limited to the immediate neighbourhood of the original focus? In fact, should we not regard the fluid in such a case as having protective qualities and avoid its loss?

Arguing on such premisses one might ask why use drainage in a generalizing case with inodourous fluid? In such a case the inflammation having spread some distance from the original focus, it would be reasonable to presume that about the original focus at least the inflammation will have reached the suppurative stage which would necessitate drainage.

A fortnight ago I operated upon a patient with appendicitis who presented the following condition: Free inodorous fluid everywhere and no bowel distension and with frank inflammatory signs limited to the immediate neighbourhood of the appendix which was gangrenous at one spot and ruptured during its removal. Notwithstanding the rupture the abdomen was closed without drainage. There followed extension of the peritonitis as evidenced by spread of tenderness with distension and accompanying high fever. The patient was treated as for peritonitis and her recovery was marred only by a small offensive abscess occurring in the upper angle of the wound. Until quite recently I would certainly have used drainage in such a case.

You will have noted my attempt to divide these cases of peritonitis into three classes, first, unlocalized focal peritonitis in which the signs of distinct inflammation are confined to the immediate neighbourhood of the original focus; second, generalizing peritonitis in which these signs have spread over some extent but not all of the peritoneum; third, generalized peritonitis in which the inflammatory signs appear to be universial. It would be useful to discuss the possibility and usefulness of some such classification, for unquestionably the term general peritonitis is used in a rather loose way.

Another matter worthy of consideration in these bad drainage cases is the method of closing the remainder of the wound. In generalized types my experience has been that the sutured portion of the wound inevitably breaks down with sloughing of the wound surfaces as deep down as the muscle and when the tension sutures have to be taken out, the affected tissues gape open. After separation of the sloughs the wound closes in gradually with little or no weakening of the abdominal wall, if the nerve supply to the muscle has not been impaired during operation. Can we not improve on this? I propose in future to close the aponeurosis with a running suture of silkworm gut, leaving the skin unsutured, thus avoiding tension and the presence of a line of catgut in those tissues most susceptible to infection. When infection occurs, the presence of a line of catgut must surely tend to spread the infection and tension is surely harmful when once inflammation occurs.

For these reasons I have recently adopted the following method in closing clean abdominal wounds. Instead of closing the aponeurosis with catgut and inserting "sneezers" of silkworm gut, I suture the aponeurosis with a running silkworm gut suture secured beyond each end of the wound to a piece of thin rubber tubing, coapting the skin edges with fine catgut. It saves time and reliably closes the aponeurosis avoids the use of catgut and the presence of tension in that portion of the wound most apt to become infected. Further, if infection of the wound occurs, the silkworm gut need not be disturbed. If one end of the suture be cut twenty-four hours before removal, it is withdrawn quite readily.

In conclusion, I will give you the result of my search for references to the treatment of peritonitis in the recent surgical works to which I have been able to get access. Price's "Practice of Medicine" (1926), by E. G. Slesinger and Da Costa's "Modern Surgery" (1925) both favourably refer to it but at no length. The article on acute peritonitis in Volume II. of "Modern Technique in Treatment" (1926) does not even mention it and advocates the purgative treatment in this way:

My object in giving purgatives is not that I think people recover from peritonitis by having their bowels moved, but, first, because any distension hampers chest movements and increases the liability to bronchitis, and, secondly, because I want to know early if the patient is going to have post operative paresis of the intestine or not. An enterostomy may save him on the third day, but will probably be credited with having killed him if done on the fourth day. Lastly, I believe if the bowels are kept mildly wriggling for a few days after operation it prevents a thin film of lymph attaching one piece of gut to another from becoming a permanent organic adhesion and thus causing obstruction in a week or two.

After hearing what I have had to say tonight I leave you to imagine what I think of this, which occurs in an article from *The Lancet*, purporting to be the accepted practice of today. In the "Treatment of the Acute Abdomen," by Zachary Cope (1926) all

the usual remedies for emptying the bowel are advocated and if these fail jejunostomy and then

Pain should be alleviated by large foments and by giving small doses of morphine. The danger of aggravating the paresis of the bowels must be remembered. If the condition of the patient is desperate and the pain great we consider that quarter grain doses may be given.

Here again the old dread of ileus. Now for the text books.

I understand that "Rose and Carless" is the text book mostly used at our university. The following is from the latest edition:

When intestinal distension is very great so that during operation it may be difficult to reach the cause of the trouble or return the extruded viscera, it may be advisable to tap a coil of small intestine and empty the contents or to stitch in a rubber tube and allow the bowel to subsequently empty itself, dealing with the fistula so produced at a later date. The reduction of the distension is an essential element if a successful issue is to follow, but undue manipulation must be avoided. If the bowel is merely tapped and at once closed it may be advisable to follow the plan suggested by McCosh of injecting several ounces of a saturated solution of epsom salts before closing the abdomen. With the same end in view the hypodermic administration of strychnine or eserine may be employed after the operation with the idea of stimulating the unstriped muscle fibres of the intestinal wall.

There are four "maybes" in these few lines and the only thing the writer seems to be sure of is that it is essential to a successful issue that the distension be reduced.

As regards after treatment, there is the following:

On the second day the bowels are likely to become distended with flatus and it is necessary to obtain relief. This is best effected by a turpentine enema in the first place, followed by a dose of castor oil or of sulphate of soda, or repeated small doses of calomel.

There is no mention of the opposite line of treatment.

In Choyce's "System of Surgery" (1925) is found:

It is of the utmost importance to get the bowels opened freely as soon as possible: a dose of calomel may be followed by repeated doses of mag.sulph. until a free action is obtained and enemata containing turpentine are often useful. Subcutaneous injections of pituitary extract or of eserine sulphate appear to be useful in stimulating peristaltic action.

There is again no mention of the treatment by rest.

In "Cheyne and Burghard" (1923) under "General Suppurative Peritonitis" we read:

From the point of view of treatment this is one of the most terrible and most disheartening conditions that can be met with.

Treatment is rather perfunctorily dealt with and there appears no mention of the treatment by rest. The necessity of relieving the distension on the lines usually advocated is stressed.

J. Renfrew White, in "A Manual of Surgical Handicraft and Physiotherapy" (1926), puts the matter thus:

Two different lines of treatment for peritonitis after laparotomy have been adopted. In the first every attempt is made to get the bowels to move. Free purgation is looked upon as the only possible means of saving the patient's life . . . . In the second line of treatment the very opposite state—absolute rest to the stomach and intestines—is sought. No food is given and no attempt made to stimulate bowel action.

Which of these two methods will give the best results is not at the moment decided.

No mention is made of the use of morphine.

I think these references prove my contention that the method of treatment I am advocating, is not sufficiently well known. We have had the method on trial for five years in Kyneton to our utmost satisfaction and I feel it a duty to take this opportunity of bringing the subject before this meeting to-night in the hope that other hands with ampler opportunities than we have at Kyneton, will give it a fair and honest trial.

THE TREATMENT OF THYREOID ENLARGEMENT INCLUDING EXOPHTHALMIC GOITRE BY INJECTIONS OF QUININE AND UREA HYDROCHLORIDE INTO THE THYREOID GLAND.[1]

By H. G. LOUGHRAN, M.B., B.S., (Melb.),
Honorary Surgeon Kyneton Hospital, Victoria.

My excuse for presuming to occupy the valuable time of this important meeting is that I am going to bring under your notice an extraordinarily efficient method of treatment which seems to be little known in Australia and even to be little practised in the country of its origin—America.

A description of the method was published by Watson in the *Journal of the American Medical Association,* 1916 and I have seen no reference to it since.

Before going into the details of the treatment I shall describe how I first came to use it.

On December 3, 1917, a girl, aged 17, was admitted to the Kyneton Hospital suffering from exophthalmic goitre. She had a large pulsating thyreoid tumour, considerable exophthalmos, tremor and a pulse rate of 160. She was 175 centimetres (five feet ten inches) in height and weighed forty-four kilograms (seven stone). She was treated by rest in bed, ergot and bromides for six weeks. There was practically no improvement in her condition. Operation was suggested but declined by the parents.

The quinine and urea treatment was now commenced. After the very first injection there was a definite improvement in the general condition. Injections were given twice a week at first, then once every week and then once a fortnight. In four weeks from the first injection the patient was allowed out of bed, the pulse rate being only 80 and the exophthalmos almost gone, though there was still a noticeable tumour. A fortnight later she was allowed to go home, and attended the hospital as an out-patient. She had altogether twelve injections, extending over a period of three months.

The gland though still palpable was now small and hard and it was difficult to know whether the point of the needle was in it or not, so I discontinued the treatment. I wondered whether recurrence would take place, but instead of this the gland continued to atrophy till it became impalpable. None of the symptoms recurred and when I last saw the patient, over seven years after the last injection, she looked perfectly well and her weight was 73.8 kilograms (eleven stone ten pounds).

After this I treated six patients with simple goitre successfully by the injections, but did not get another with exophthalmic goitre till March, 1920.

[1] Read at a meeting of the Victorian Branch of the British Medical Association on October 23, 1926.

A woman, aged forty, had a large goître, exophthalmos and a very bad cardiac condition with great dyspnœa. She had had no menstrual periods for eighteen months. When first seen, she was really dangerously ill. She was removed to hospital and after a course of ten injections all the goître symptoms disappeared and have not returned, though her cardiac condition is not altogether normal. Her monthly periods came back and she became pregnant and had a healthy baby. She has now no thyreoid symptoms at all but has an irregular heart, most noticeable when she is suffering from bronchitis which she gets nearly every winter.

Technique.

The technique of the treatment is as follows:

A 4% solution of quinine and urea hydrochloride is used. From four to eight cubic centimetres of this solution, according to the size of the goître, are injected. I use a ten cubic centimetre "Record" syringe and as fine needles as I can get. If using a long fine needle, it is just as well to make a file mark near the butt so that if the needle breaks it will break at the butt.

Place the patient on her back with a pillow under her shoulders so as to extend the neck and make the thyreoid prominent. Paint the skin with iodine. Stand on one or other side of the patient and place the pulp of the fingers of the left hand on the anterior border of the sterno-mastoid and feel the common carotid artery pulsating beneath them. Press this slightly backwards and push the needle well into the enlarged lateral lobe. If the needle is sharp there is practically no pain except the skin prick. Ask the patient to swallow and if the needle is in the thyreoid it will move up and down with the gland.

By partially withdrawing the needle and changing its direction various parts of the gland can be injected through a single skin puncture. If there are two big lateral lobes without much enlargement of the isthmus, it is advisable to make a skin puncture on each side. Sometimes the main enlargement is directly in front of the trachea, and in this case the needle is inserted directly backwards. While the goître is large, there is no trouble in getting into the gland and one can move the needle about with freedom. After a few treatments, as the goître gets smaller, it becomes harder and there is more resistance to the needle, also one needs more care in order to be sure that the point of the needle is actually in the gland. Fortunately when the gland has shrunk to about one third of its original size, the treatment can be stopped and the shrinking will continue until no tumour is perceptible. In exophthalmic goître the symptoms of hyperthyreoidism have invariably been relieved before the tumour has altogether disappeared.

Rationale of the Treatment.

A combination of quinine and urea hydrochloride is well known as a local anæsthetic. Used in too concentrated a solution it is liable to cause delayed healing and sometimes even sloughing and formation of scar tissue. Its action in goîtrous tumours is probably a necrotic effect on the parenchyma of the gland. This is accompanied by an overgrowth of the sclerenchyma which finally contracts, strangling the remains of the parenchyma. In fact a condition of atrophic cirrhosis of the thyreoid is produced. In none of my cases however has the atrophy gone far enough to produce myxœdema, though I have seen two cases of myxœdema following on complete thyreoidectomy.

Unpleasant Features of the Treatment.

Sometimes a vessel is wounded and there is a little bleeding when the needle is withdrawn. The best treatment for this would probably be to let the bleeding go on until it ceased naturally, but if the patients are nervous I usually seal the puncture with collodion and cotton wool and this stops the bleeding at once. I have seen several small hæmatomata after this proceeding, but they have always cleared up within a week and have never suppurated. Patients usually complain of a feeling of fullness and tension lasting for an hour or two after the injections.

Beyond this there have been no unpleasant after effects whatever. The patients, if fit to walk about before the injections, are not confined to bed. One lady used to come up from Melbourne and go home the same day.

Caution.

I would ask anybody who feels inclined to make a trial of this treatment, not to commence on a patient who has only a very small goître, though symptoms of hyperthyreoidism are present. Such patients improve more slowly than those with prominent goître, the reason being I think that one sometimes fails to get the point of the needle into the gland. If I had struck such cases early I should have been discouraged, but after succeeding with some big goîtres my confidence was so great that I persevered with the smaller ones until they cleared up. The large goîtres are the most suitable for this treatment. In fact "the bigger they come the harder they fall."

Results.

All the patients have been females. During the eight years that I have been practising this treatment, I have treated all told twenty-two patients. Of these seven had a condition which was definitely exophthalmic goître, with Stellwag's sign, tachycardia and tremor. Of these seven six made a complete recovery, one died of pneumonia while under treatment. The pneumonia supervened on an attack of influenza and had apparently nothing to do with the injections. Of the remaining fifteen patients three had some symptoms of hyperthyreoidism and would probably have become exophthalmic if not treated. The condition in all the others cleared up.

I have one patient under treatment at present.

The patient had an enormous goître, with no exophthalmic symptoms. She lives near Warrnambool and has only been able to come once a month for treatment. Her neck measurement has decreased from forty-five centimetres (eighteen inches) on February 17, 1926, to 38·75 centimetres (fifteen and a half inches) September 22, 1926. She remarked on the last occasion that she did not think she would need to come up again as the goître now caused her no discomfort.

I have made no attempt to differentiate between various varieties of goîtres. I think from the feel some of them have been cystic, but all have had the same favourable course.

Though the number of cases treated has not been large, the results have been remarkably consistent and for this reason I think the treatment worthy of your notice.

RECOLLECTIONS AND IMPRESSIONS AFTER TWENTY-FOUR YEARS OF COUNTRY PRACTICE.[1]

By W. R. GROVES, M.D., B.S. (Melb.),
Kyneton, Victoria.

THE title of this article will have I hope prepared you for something quite simple.

Let me first try and convey to you some of the advantages, as I see them, of country practice. I remember well that in my early days I regarded country practice as unthinkable and imagined that there could be no place but the metropolis for anyone who had any ambition. As a matter of fact, I was doing my second year when I spent a vacation with a fellow student on a farm some ten miles from Kyneton. One day we visited Kyneton and whilst strolling around the town we passed a doctor's brass plate. I turned to my friend and exclaimed "Good Lord, fancy practising in a place like this." Four years later I bought a practice in that very town and have been there ever since.

It is true that circumstances rather than inclination determined this matter and I believed at the time that my sojourn in the country would be only for a few years.

As time went on I came to appreciate the advantages of country practice and I seem to have taken root. The scope of the work, the extensive field one is always endeavouring to cover, certainly offers ample opportunity for the exercise of the faculties. To try to keep reasonably proficient in medicine, surgery, obstetrics and gynæcology and in touch with the numerous other branches of our work insures this, the great point being of course the constant endeavour. It is always necessary to learn and relearn and to make good use of the journals and to refer frequently to a library, particularly as practical experience is relatively limited and fitful.

To counterbalance for being away from the seat of learning there are however many advantages, the opportunity to appreciate home life, to indulge in hobbies and sport, the comparative independence and freedom, if such be chosen, from social obligations, the clean healthy surroundings and absence except occasionally of rush and bustle. I claim that it is possible to enjoy these privileges and still to have ideals as regards professional practice and that to try to be a good country practitioner is no mean ambition.

Plodding along with honest purpose, the country practitioner may surely aspire to be some sort of ornament to his profession. It is given to few to be a Mayo or an Osler.

Speaking of Sir William Osler, what a debt the profession owes to Harvey Cushing for giving us these two wonderful volumes which permit us to make the close acquaintance of such a man—such a genius and so human! "The Life of Sir William Osler" should be a sort of family Bible among us. To those who have not read it I would say, do not be content until you do. Acquaintance with such a leader in our profession is an inspiration both professional and personal. And here I would like to acknowledge the help and inspiration I have often received from meeting and seeing the work of our own leaders in our profession in Melbourne. Being handy to Melbourne, I have taken the opportunity frequently to drop into the hospitals in Melbourne to see these men at work. This is a thing I would strongly advise every country practitioner to do on every opportunity. I am sure they would experience, as I have always experienced, the warmest welcome. For those who lack these opportunities there are the splendid post graduate courses available. Every few years at least we should attend one of these classes. In this regard my impression is that there is nothing better, in surgical work for instance, than to go around watching the ordinary every day operations such as radical cures of hernia, appendicectomies *et cetera*, being done by different men. It so broadens the outlook, getting a man out of stereotyped ideas. I often think it would be good for even our leading surgeons to go around watching one another's methods in every day operations, for they can be stereotyped also. Though the country practitioner must acknowledge that he is but the pedlar of the wares of his master craftsmen, may he not venture a gentle criticism.

As regards work, I suppose it is the experience of all of us to find that whereas in earlier days we were apt to concentrate more on the nature of a condition than the patient, as we gain experience we take the patient more and more into consideration. Here the country practitioner has an advantage in the opportunity of more often knowing and understanding his patient.

I think he has an advantage also in lodge practice. It has been my experience that, provided a practitioner does not have too many of them, lodge patients can be trained to become quite acceptable. I find that if they are given, when it is needed, exactly the same attention as private patients they show their appreciation by avoiding unnecessary consultations, and if the doctor adopts this practice towards them, he is in the position, if any imposition be attempted, to make a firm protest. If a new lodge patient is put on my list and I find him coming along for trivialities, I usually find he comes from the city and I judge from this that herein the country practitioner has another advantage.

I suppose the experiences most keenly remembered are the mistakes that have been made. These are more often the result of want of care than want of knowledge. My own mistakes have often been the result of allowing my attention to be led in a

[1] Read at a meeting of the Victorian Branch of the British Medical Association on October 23, 1926.

certain direction that looks like a short cut to a diagnosis to the exclusion of factors, knowledge of which would have obviated a mistake. An early experience of this kind, but I think a forgivable one, will I hope interest you.

I was called to a married woman who stated that she was pregnant and was afraid she was going to miscarry. She had been losing, though not excessively, for forty-eight hours. Though there had been no pain, a digital examination revealing a uterus about the size of a three months' pregnancy with softened cervix and patulous *os* in which a mass was presenting, I had no hesitation in saying that I thought she was right and that abortion was inevitable. Ergot was given at intervals, but twenty-four hours later her condition had not altered. As she still remained *in statu quo* the next day I made an instrumental examination and saw that the mass presenting was a small pedunculated polypus and the patient subsequently went to term. I need only add that when I presented my account the husband refused to pay it on the grounds of my having made a mistake, thereby putting him to unnecessary expense in keeping him away from his work up country.

Another early blunder was due to want of experience.

An elderly *primipara* at six and a half months was seized with eclampsia and came under my care at the Kyneton Hospital. She was in labour and was quickly delivered of a small child, but as often happens in these early premature confinements the afterbirth was delayed. After waiting some time I essayed its manual removal. Though the patient was deeply anæsthetized I found it impossible to introduce my hand within the pelvic outlet. Fortunately our resident at the time was a lady doctor of the *petite* type and she was able to introduce her small hand into the uterus and separate the placenta. But when she came to remove it her clenched hand could not be withdrawn. The placenta had to be expressed after the open hand was withdrawn.

The patient became pregnant again and I thought the above experience warranted my expressing the opinion that she would have to be delivered by Cæsarean section. The people wisely consulted a specialist who found some narrowing of the outlet, but advised a trial of labour. Perhaps not unnaturally the confinement was placed in the hands of a fellow practitioner and in due course a baby was born without I believe a great deal of trouble. At any rate I was told that the doctor who was not particularly fond of me, had said to the husband "Pooh! no trouble at all, the woman is as big as a box."

This was an early lesson in the wonders of Nature and for more reasons than one I have never since advised Cæsarean section in this class of case without a test of labour, not having met with any great pelvic contractions. Except for well-defined indications the man who performs Cæsarean section without a trial of labour, is either deficient in experience or in honesty.

One of the most extraordinary cases I have experienced was associated with another blunder due to jumping at a conclusion in diagnosis—an obstetrical case again. There must be more pitfalls about the condition of pregnancy than all the other conditions we meet with put together.

Some six and a half years ago a young man came to me and stated that he had got a young lady with whom he was keeping company, into trouble. Quite decent folk they were too. He was certain she had never missed a period till three months previously. When I was asked what they were to do, I tendered the only advice one can give in such cases—to get married without delay and this is just where I slipped. After being married three months the young wife called to engage me for her confinement when I discovered she was not pregnant. She was a healthy young woman, aged twenty-two, with a strong growth of black hair on her chest and abdomen and face, the latter being shaved daily. Well, all the endocrine preparations were tried and she consulted specialists without any change in her condition and everyone came to the conclusion that she had had an extraordinarily early climacteric. After two and a half years of complete amenorrhœa the periods returned. Ten months later she noticed she was getting very big and consulted one of my colleagues to discover that she was pregnant, though she was having periods of four to five days' duration regularly. After the birth of the baby the periods were regular for three years when they suddenly ceased again. After missing two periods she came to me to see if she was pregnant. I very guardedly gave it as my opinion that she was not and after events showed that this time I managed to pick a winner. The amenorrhœa has persisted and she has gradually gone almost stone deaf.

I wonder whether the deafness and unbalanced internal secretion are related.

I am now going to venture on a subject which concerns very seriously the country practitioner and perhaps others in the profession. In doing so, I feel something like one does when about to take a cold shower on a frosty morning. I refer to the professional relationships existing among doctors in country towns. Our relationships are too often based upon rivalry and jealousy which lead to discord and faction, instead of upon unity and good-fellowship which are essential to contentment and the maintenance of our professional dignity.

It is said that in some towns where there are only two practitioners there is such discord that the population of those towns is divided into two camps according to which doctor they attend. This may be an exaggeration, but I know it is only too true that very often things in this respect are not what they should be and nothing could be more shortsighted, foolish and undignified.

Unquestionably this is a very substantial skeleton in our cupboard. We are suffering from a sort of neurasthenia and we need to confess openly our hidden trouble. Let us trot the skeleton out and expose it to the light of day. This should help to remedy this very difficult condition, at any rate this is my hope in broaching this unpleasant subject.

Even if the cure be beyond us we can surely do something in the way of prophylaxis by taking some steps to open the eyes of budding practitioners to the risk of infection. How often does a young man, taking over a practice, escape infection? Only too often he is prejudiced against his future colleagues by his predecessor who deems it his duty to acquaint him of the iniquities of the men he is to work with or should I say against. He might at least be reminded that it takes two to make a quarrel and that he would be wise to face the problem of future relations with his fellow practitioners with an open mind and a broad mind and a generous mind.

In attacking the problem at this point there lies all the more hope of success in the fact that we are surely all of us acquiring a broader outlook and the young graduate of to-morrow should be more capable of a wide outlook than the graduate of

yesterday. I would suggest that the Medical Students' Society take this matter up. It might arrange for an annual address to senior students on this and other matters which would forewarn them of some of the difficulties that lie before them on entering practice. To be forewarned is to be forearmed.

What can one advise in the way of treatment of the established condition? First of all something might be done to bring more prominently before those concerned the tremendous advantages accruing where united and friendly relations exist among us. Those who are fortunate enough to work under such conditions should take every opportunity of stating these advantages. I have the privilege of working in a town where such a happy state of affairs exists to-day and there is none too much room for us either. Two doctors (at any rate, two and a half) could do the work the three of us are doing. I have experienced the contrary state of affairs in the past, and I would sacrifice a great deal to preserve our present contentment and avoid petty friction and irksomeness, which prevailed in days gone by, even although disruption was never acute. After all we live only one life and it is pretty short even if we be fortunate enough to reach our allotted span; so why in the name of goodness do we not make more effort to live under the happiest conditions attainable? Supposing the effort demanded some sacrifice, happiness and contentment are worth it.

> A contented mind is a blessing kind,
> And a merry heart is a purse well-lined,
> So what care I, let the world go by,
> For 'tis better far to laugh than cry.

This—from the monk's song in *La Poupée*—is a philosophy that might do us all good and help to guard us against misunderstandings. We must be tolerant and generous, but above all honest in purpose. On the sportsground these attributes are demanded of a man before we dub him a sport. We all like to think we are sports when playing games, but are we as keen about it in regard to our daily work?

One thing is certain. The lead must come from the senior and better established practitioners and the junior men must show their appreciation by reciprocating.

I think it would help materially if we could abolish the old fandangled idea that we were inclined to have that certain patients in a town or district belong to us. When a patient has been under the care and attention of one man on and off for a number of years, he not unnaturally feels aggrieved if the patient suddenly without apparent reason changes his doctor. But there is no earthly reason why he should not and still less for the doctor feeling aggrieved with the colleague whom the patient consults. However, we may as well be honest and admit that more or less of this feeling does arise, but a proper spirit will on second thoughts banish it, especially when we remember that similar circumstances but reversed will recur before long. It might be better for us if patients were more in the habit of going from one doctor to another. We would get used to it. And it would be a still more excellent thing if it became the custom among us to speak fully about any such changes in our *clientèle*.

This would necessitate frequent personal contact and such meetings would do much to break down the barriers so prone to come between us. Herein lies one of the great advantages of medical society meetings. I could not perhaps bring my remarks to a conclusion in a better way than by quoting a figure of speech used by Sir William Osler in an address of his on organization in the profession.

He said:

> Of the value to the local practitioners of a medical society, we are all agreed. How common the experience to enter a cold and cheerless room in which the fire in the grate has died down, not from lack of coal, not because the coal was not alight, but the bits large and small, falling away from each other, having gradually become dark and cold. Break them with a poker, get them together, and what a change in a few minutes! There is light and heat and good cheer. What happens in the grate illustrates very often the condition of the profession in a town or county. Singly or in cliques the men have fallen apart, and, as in the dead and dying embers, there is neither light nor warmth; or the coals may be there alive and bright, but covered with the ashes of discord, jealousy and faction.

The medical society is the poker with which unsociable practitioners may be brought together.

I am afraid that you will think I have been talking an awful lot of rubbish. But I must ask you to take the will for a deed that I know is really beyond my accomplishment. I can only assure you that behind my poor effort there is that one very great thing—honesty of purpose.

THE ARGYLL-ROBERTSON PUPIL: A CONTRIBUTION TOWARDS ITS EXPLANATION.

By HERBERT J. WILKINSON, B.A. (Adel.), M.B., Ch.M. (Sydney),
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THE Argyll-Robertson phenomenon was first described by Argyll-Robertson in 1869 and refers to the condition in which there is abolition of the direct and consensual pupillary reaction to light incidence in both eyes, while the reaction to accommodation is found to be normal.

Its importance lies in its connexion with certain diseases which, as Babinski first pointed out, are the consequence of syphilitic infection. Anton Lutz,[1] however, states that there is no doubt that the typical Argyll-Robertson phenomenon is very exceptionally found in certain non-syphilitic diseases and gives the following list of them: *sclerosis multiplex, syringomyelia, atrophia muscularis spinalis progressiva, neuritis interstitialis hypertrophica, ataxia hereditaria, alcoholismus chronicus gravis* and diabetes and often in certain traumatisms of the skull. But these are rare exceptions and Lutz says that Grasset is right when he expresses the importance of the immobility of the

pupil to the light reflex for the practitioner in the following terms: "The Argyll-Robertson phenomenon indicates tabes, sometimes general paralysis, always previous infection with syphilis."

As regards the actual occurrence in syphilitic infection, Lutz gives the following figures:

Incipient tabes	45% of cases
Fully developed tabes	85% of cases
Paralysis generalis—	
In adolescents	17% of cases
In adults	50% of cases
Cerebral syphilis (syndrome of Babinski)	10% of cases

The importance of the phenomenon is still further emphasized when it is realized that it can precede a metasyphilitic disease for several years and can be during that time the only sign of syphilitic infection. It always developes very slowly and after having appeared it as a rule remains permanent. Again it is almost always found in both eyes, but there are rare cases in which it occurs only on the one side and in these it is mostly the precursor of general paralysis.

Although this reaction is now well known and its importance is usually well recognized, its explanation from a neurological point of view has been difficult. So far most of the controversy has centred around the question of why the light reflex is abolished, but it is now generally agreed that the light reflex path is interrupted in the mesencephalon in the region of the aqueduct of Sylvius, where a lesion of small dimensions can interrupt the connexion between both *superiores colliculi* and the *nuclei photomotorici*[1] on both sides.

Figure I. is a diagram of the paths concerned and it shows that a lesion in the region of the

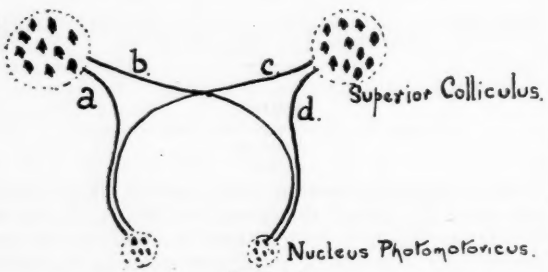

FIGURE I.

aqueduct may give various results, according to which of the paths *a*, *b*, *c* or *d* are interrupted.

If *a* or *d* only is interrupted, there is abolition of the direct light reflex in one eye with conservation of the consensual reaction in both eyes. Five cases only are recorded.

If *a* and *b* or *c* and *d* are interrupted there is abolition of the direct and consensual reaction in one eye only.

If *a*, *b* and *c*, or *d*, *c* and *b* are interrupted, there is abolition of the direct reaction in one eye only and of the consensual reaction in both eyes.

[1] The *nucleus photomotoricus* is that part of the third nucleus which governs the movement of the pupil.

If *a*, *b*, *c* and *d* are interrupted, there is abolition of the direct and consensual reaction in both eyes. This is the result to be expected from a lesion which extends from the aqueduct and this is what usually occurs in the production of the Argyll-Robertson phenomenon.

If *b* and *c* only are interrupted, there is abolition of the consensual reaction in both eyes, with presence of the direct reaction in both eyes. Only one case of this is recorded by Baumeister.[2]

The fact that these various theoretical results have all been observed clinically and especially the fact that the phenomenon usually involves both eyes, strongly supports the above view that the site of the lesion is in the mesencephalon; but still stronger evidence is the fact, as stated by Holden,[3] that non-luetic tumours in the region of the third ventricle by pressure produce typical Argyll-Robertson pupils. So while it appears that our views as to the cause of the abolition of the pupillary reaction to light incidence in this phenomenon have now become very definite, yet up to the present no satisfactory explanation has been put forward as to why, at the same time as the reflex to light is abolished, the reflex to accommodation remains unaffected.

It has been assumed that the afferent path of the pupillary reflexes arises in the retina[4] and, following on this conception that the fibres concerned in the accommodation reflex form a set distinct from those which form the afferent path in the light reflex. Beyond this, no further statement as to the course of the afferent path could be found except in the notes of the neurological lectures of the late Professor Hunter who stated that the fibres in the light reflex arc pass closer to the aqueduct and that, therefore, this arc only is broken, while the other is unaffected. Obviously this explanation is inadequate and as far as I have been able to investigate, the two sets of fibres have not been demonstrated; but apart from this it is difficult to imagine why the lesion should not affect both sets of fibres, at least occasionally or eventually, as they would be close together and to the aqueduct and the distance concerned would be a matter only of millimetres at the most.

In considering the source of afferent stimuli which reflexly cause contraction of the pupil, no account has up to the present been taken of those coming from other sources than the retina. Now, whereas the light reflex must of necessity be elicited by stimulating the retina, it is quite possible that there may be other sources concerned in eliciting the reflex movements of the pupil on accommodation and that impulses from these other sources pass by paths which enter into no relation whatever with the aqueduct, and are therefore not involved in the lesion associated with abolition of the light reflex.

Examination of preparations of the extrinsic eye muscles reveals that they are richly supplied with sensory nerves, more so than muscles in other parts of the body. Now these nerves supply us with a very sensitive mechanism for the recognition of movement through altered states, both of tension in the tendons and of contraction in the muscles them-

selves and it is now suggested that these may possibly form sensory limbs of the arcs associated with the reflex movements of the pupils on accommodation.

The act of accommodation is always associated with convergence or divergence of the eyes and this is brought about principally by reciprocal contraction and relaxation of the medial and lateral recti. This gives rise to sensory stimuli among which are some reaching the *nucleus photomotoricus* in the oculo-motor nucleus and reflexly causing movement of the pupil. The afferent limb of this arc enters *viâ* the oculo-motor nerves. This has been definitely proved by Tozer and Sherrington.[5] They show that the rich forest of sensory endings in the eye muscles are derived from myelinated nerves which pass into the brain stem with the oculo-motor nerves supplying the muscles concerned, so that those from the medial recti pass *viâ* the third cranial nerve and those from the lateral recti *viâ* the sixth.

It may be pointed out that the usual textbook statement that the oculo-motor nerves are purely motor is incorrect. They are mixed nerves. These sensory nerves, of course, form afferent limbs of other reflex arcs, for example, those concerned with the proprioceptive sense and probably their chief function is concerned with these reflexes.

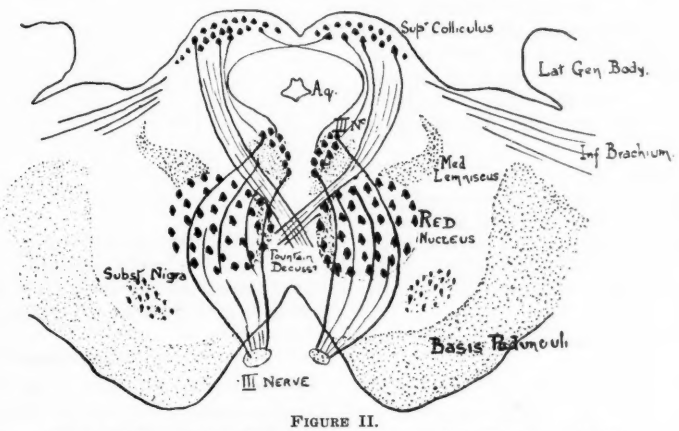

FIGURE II.

Cross Section of the Mesencephalon (somewhat diagrammatical) through the Superior Colliculus. This shows that the sensory fibres from the extrinsic eye muscles entering the third nucleus *viâ* the third nerve form different relations with the aqueduct than the sensory fibres from the retina and entering *viâ* the optic tract and superior colliculus. It also shows the direct and crossed connexions of the superior colliculus and third nucleus of both sides.

It is seen, then, from a consideration of the above that these afferent fibres have different relations in the brain stem from the afferent limb of the light reflex and therefore a lesion which interrupts the light reflex, leaves the other intact.

Figure II. shows the relations of these paths in a cross-section of the mesencephalon taken through the superior colliculus.

It is quite obvious to any observer and there is general agreement that the acts of accommodation, of convergence and pupillary contraction are most intimately associated one with the other, so much so that some authorities, such as Oppenheim,[6] state that the processes of convergence and contraction of the pupil are associated movements, that is, one movement is necessarily associated with the other and the voluntary impulses which produce contraction in the medial recti, simultaneously reach the *sphincter iridis*. Oppenheim, however, makes the note that the experimental observations of Marina and Cofler have not succeeded in explaining the close connexion of these processes. It is quite unnecessary to account for the associated movements in this way and it is the purpose of this communication to try to show this.

As evidence that the afferent limb of the arc concerned in reflex contraction of the pupil in accommodation does not arise solely from the retina, the following case given by Dunn[7] may be cited:

James F., a negro, aged fifty, had both eyes totally blind and both pupils fully dilated. They gave no response to light either directly or consensually. When he was told to try his best to look at the end of his nose, both eyes would turn downwards and slightly inwards. As a result both pupils distinctly contracted, dilating when the eyes returned to their usual position.

With the object of trying to establish the relation between the three acts of movement of the eye, of accommodation of the lens and of pupillary movements the following experiments were devised.

Experiment I.

The first experiment was devised to show what changes take place in the pupils when accommodation is dissociated from convergence of the eyes.

A in Figure III. is a large 8·75 centimetre (three and a half inch) blanket pin, placed 3·6 metres (twelve feet) from *B*, an ordinary 2·5 centimetre (one inch) pin. These pins are illuminated by light coming through windows situated on both sides of the line *AB* and when viewed in the line *BA*, are seen as "silver" lines on a dark background, *CD*. Now the left eye, *L* (Figure III.), is placed directly in line with the pins, *B* and *A*. This is readily accomplished by shielding the right eye and looking at *A* over *B*. The left eye is placed a distance of thirty centimetres (one foot) from *B* and the distant pin *A* is focussed with both eyes.

If now the near pin *B* is focussed, no movement takes place in the left eye, but the right eye converges and both pupils constract.

To dissociate convergence from accommodation, a prism is required. In the experiment, with the distances as stated above, a 10° prism was used.

The distant pin *A* is first focussed with the two eyes without the prism and then when the prism is interposed, the near pin *B* is focussed. Figure IV. shows the paths of the rays and it is seen that they enter the right eye from the near pin *B* from the same direction as they enter it from the distant pin *A* in Figure III. In this case

accommodation is being carried out for a near object without the necessity of converging the eyes. The experiment was tried with a number of different subjects and where no movement of the eye could be detected, no change was seen in the size of the pupil. Two pins of different size were used to try to obtain retinal images of equal size and light value so as to avoid the production of light reflexes.

This experiment shows that when the act of accommodation was completely dissociated from the act of convergence, there was no associated movement of the pupil.

Another interesting observation was made during the carrying out of this experiment and I think it is worth recording. The arrangement of the apparatus was the same as before. The subject looked at the distant pin *A*, so that the left eye looked at *A* over *B* (Figure V.). A shield *EF* (Figure VI.) was now placed in front of the right eye and the subject was directed to focus the near pin *B*. When this was done the left eye did not move of course, but the right eye rotated medially to direction *RH* and both pupils contracted. The subject was then instructed to focus on *B* with the two eyes as soon as the shield *EF* was removed from the right eye. It was found when this was done, that the right eye rotated still more to direction *RB* and the pupils again contracted slightly.

The above observations show how intimately associated are the acts of accommodation and convergence and that when accommodation is dissociated from convergence, no movement takes place in the pupil. Thus probably the movements of the pupil during accommodation, uncomplicated by differences in the light stimuli, are more under the influence of afferent impulses coming from the extrinsic eye muscles than from impulses from within the eye, either from the retina or from the ciliary bodies.

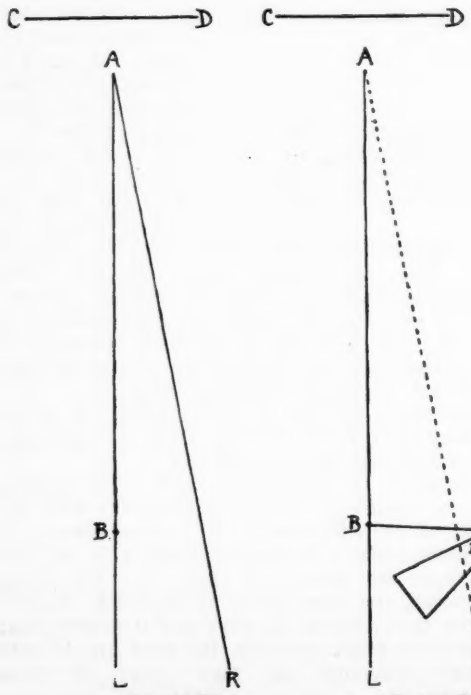

FIGURE III.

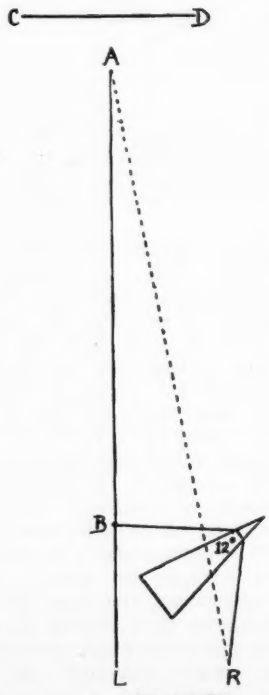

FIGURE IV.

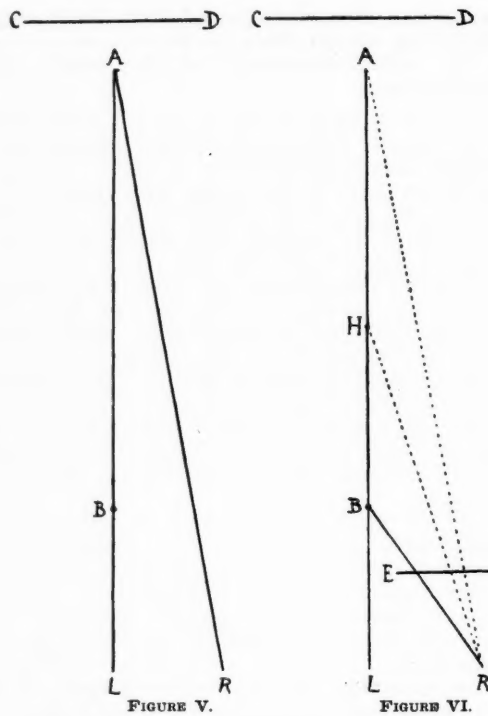

FIGURE V.

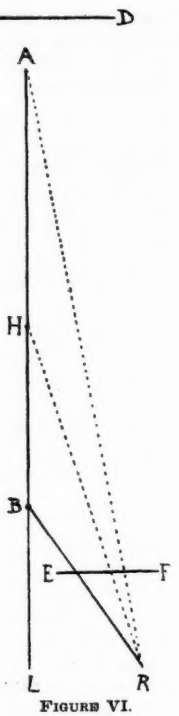

FIGURE VI.

Experiment II.

Experiment II. was undertaken to show what changes take place in the pupil when accommodation to a near object is associated with divergence instead of convergence.

The same arrangement as before was used in this case, but the left eye was placed a little closer to the near pin *B* and a 12° prism was used. The distant pin *A* having been first focussed with both eyes, the left eye was pressed under the finger and then, after the prism was interposed, the near pin *B* was focussed with the right eye. It is noticed that the right eye has to move outwards in order to see the near pin *B*. The pupillary change in this case was dilatation (see Figures VII. and VIII.).

Experiment III.

Experiment III. reveals what pupillary changes accompany lateral rotation of the eye unaccompanied by changes in accommodation.

The subject of the experiment was asked to look at the tip of the observer's nose, a distance of about thirty centimetres (twelve inches). A 12° prism was then placed in front of his right eye and he was directed to focus the tip of the observer's nose again (see Figures IX. and X.).

In this case as the object is in the same position, there is no alteration in accommodation of the lens and there is no difference in the amount of

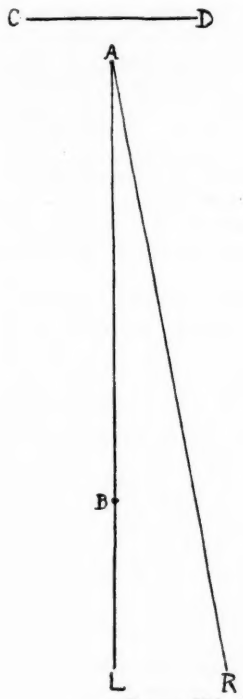

FIGURE VII.

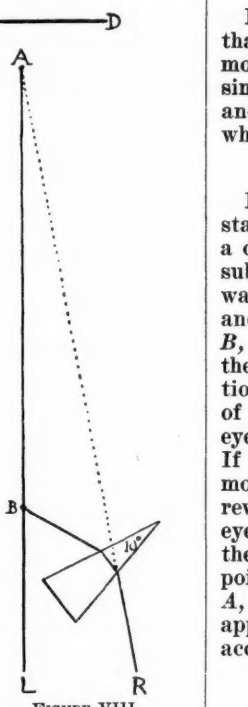

FIGURE VIII.

light entering the eye. The right eye rotates laterally and the pupil momentarily dilates, so that the two pupils are unequal. When the prism is removed the right eye rotates medially again and its pupil first momentarily contracts. As it is well known that irritative stimuli may cause dilatation of the pupil, it was necessary to try to eliminate this fallacy.

Experiment IV.

Experiment IV. reveals the changes which take place in the pupil when a prism is interposed while the subject is viewing a distant object, the prism, however, being turned in the opposite direction.

The subject looks at a distant object *M* (see Figure XI.) and the left eye is clamped with the left hand. A prism is then interposed in the line of vision of the right eye as in Figure XII. The eye in this case rotates inwards and the pupil momentarily contracts.

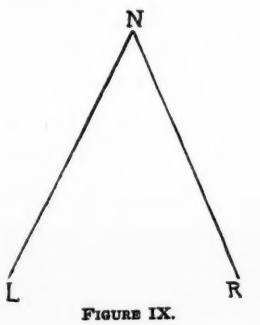

FIGURE IX.

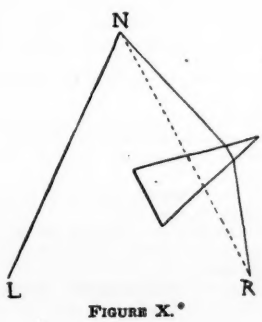

FIGURE X.

Experiments III. and IV. seemed to demonstrate that lateral rotation of the eye is associated with momentary dilatation and that medial rotation is similarly associated with contraction of the pupil and so it was decided to observe what takes place when both eyes move together.

Experiment V.

In experiment V. the observer *X* (Figure XIII.) stands in front of the subject *LR*, with his back to a dark wall *MN*, which is evenly illuminated. The subject is about 1·2 metres (four feet) from the wall and looks at a point *A* over the observer's head and then without moving his head looks at point *B*, about forty-five centimetres (eighteen inches) to the right of *A*. The observer will note a lateral rotation of the right eye with momentary dilatation of the right pupil and medial rotation of the left eye with momentary contraction of the left pupil. If the subject looks back at the point *A* for a moment and then looks to the left at a point *C*, the reverse is seen, namely, lateral rotation of the left eye with dilatation of the left pupil *et cetera*. As the subject is 1·2 metres from the point *A* and the points *C* and *D* are only forty-five centimetres from *A*, the distances *LA*, *LB*, *LC*, *RA*, *RB* and *RC* are approximately equal and therefore no alteration in accommodation of the lens is necessary.

Discussion.

It is well recognized that the act of accommodation is normally accompanied always by movements of the eye and by pupillary changes; but these experiments have demonstrated that when the act of

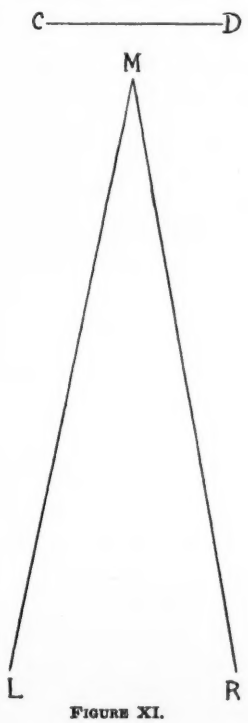

FIGURE XI.

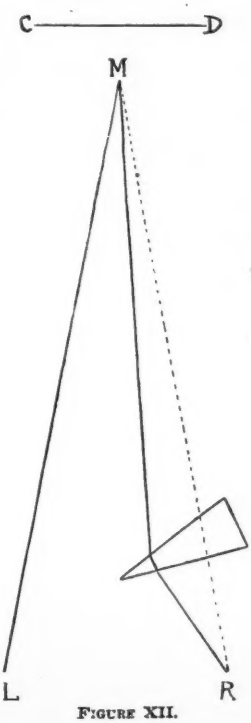

FIGURE XII.

accommodation is dissociated from eye movements and, provided that there are no reflexes due to altered light stimulus, no pupillary changes take place. Further, the above experiments seem to show that there is a definite relation between medial rotation of the eye and contraction of the pupil on the

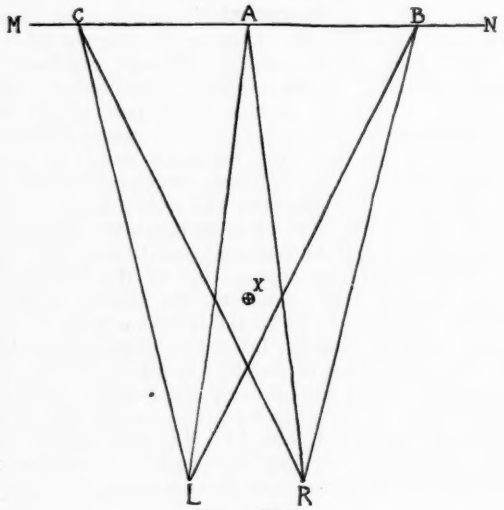

FIGURE XIII.

one hand and lateral rotation of the eye and dilatation of the pupil on the other. This evidence seems to support the hypothesis that to explain pupillary changes on accommodation in the Argyll-Robertson phenomenon, we can look to the sensory mechanism in the extrinsic eye muscles for a source of afferent impulses concerned in the reflex.

As a further support of the theory, the important part played by the sensory stimuli proceeding from extrinsic eye muscles in judgement and appreciation of visual sensations may be mentioned. Sherrington[8] devised an interesting experiment to illustrate the point. If a vertical line *AB* (Figure XIV.) about thirty centimetres (twelve inches) long is drawn on a wall about a metre (three feet) in front of the eyes, this will produce a linear image on the macula.

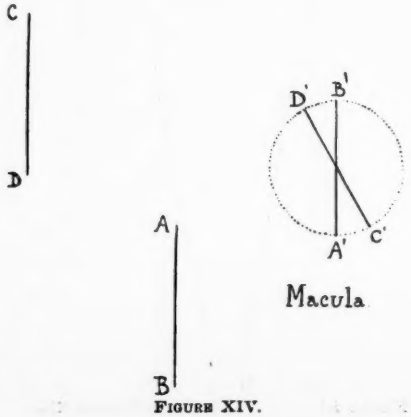

FIGURE XIV.

If now another vertical line *CD*, which lies to the side and higher up than *AB* is looked at, the image of *CD* will fall on the macula obliquely across the position of the image originally produced by *AB*, because in accommodating *CD* after viewing *AB* the eyes were rotated and turned. Although then the image falls across a different area of the macula, we judge both lines to be vertical. Our judgement in this case must be influenced by sensations from the extrinsic eye muscles associated with the movements of the eyes, which took place in the altered accommodation.

This simple experiment offers further evidence of the sensitive sensory mechanism we have in the extrinsic eye musculature.

Summary.

Experiments are described which seem to show that lateral rotation of the eye is associated with momentary pupillary dilatation in the same eye and that medial rotation is similarly associated with momentary pupillary contraction in the same eye. These facts tend to support the hypothesis that sensory stimuli, set up by movement of the eye, may reflexly cause changes in the size of the pupil. It is, therefore, suggested that the sensory limbs of the reflex arcs, concerned in reflex contractions of the pupil on accommodation and to light, travel by entirely different afferent pathways and that this forms the neurological basis of the explanation of the Argyll-Robertson pupil. In central syphilis a lesion in the region of the aqueduct of Sylvius breaks the arc concerned in reflex contraction of the pupil to light only and the arc associated with reflex contraction of the pupil on accommodation is not affected, as it does not lie in relation to the damaged area at all, but passes *viâ* the oculo-motor nerves to the third nucleus.

Acknowledgment.

In conclusion, I wish to thank Dr. Lightoller for his kindly and helpful criticisms; the many students who assisted in the experiments in the capacity of subjects and observers; also Dr. S. A. Smith, Acting Professor of Medicine, for his encouragement in the preparation of the paper and finally Professor Burkitt, Mr. W. G. Kett and others for references.

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Reports of Cases.

THE USE OF "NOVASUROL" AS A POWERFUL DIURETIC IN THE ŒDEMA OF CARDIAC FAILURE.

By A. E. ROWDEN WHITE, M.D. (Melbourne),
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AND
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FOR some time past, reports have appeared in British medical journals demonstrating the value of "Novasurol" as a diuretic in the pronounced œdema of cardiac failure. It is only recently, however, that the drug has been placed upon the Australian market and an early opportunity was found to test its claims on a waterlogged patient admitted into Saint Vincent's Hospital on October 17, 1926. The patient, a male, aged sixty-five years, had been suffering from shortness of breath for eight weeks prior to admission and this was accompanied at times with attacks of dull pain about the lower præcordial region. The swelling of the legs had extended to the abdomen and later involved the whole of the trunk and the right arm. He passed very little urine and an examination of it revealed no albumin or any other abnormality.

On examination the patient was in a state of orthopnœa, showing much respiratory distress. The heart's apex beat was in the sixth intercostal space ten centimetres (four inches) to the left of the mid-line and percussion revealed a great increase of cardiac dulness, the upper limit on the left side being at the third rib, while in the second, third and fourth spaces it extended two fingers' breadth beyond the right sternal border. The heart's action was regular, but occasional extrasystoles were noticed. In the mitral and aortic areas systolic and diastolic murmurs were present, but in the latter area they appeared to be very distant and obscured.

There was considerable œdema at the bases of both lungs and liver dulness was found to be two fingers' breadth below the costal margin. The systolic blood pressure was 170 millimetres of mercury and a blood urea examination revealed 23·2 milligrammes per hundred cubic centimetres. The patient was given tincture of digitalis 1·2 mils (twenty minims) every four hours and citrate of potash four grammes (one drachm) twice daily and the urinary output was found to be raised to seven hundred and fifty cubic centimetres (twenty-five ounces) per day. Four days after admission it was decided to try the effect of "Novasurol" in conjunction with the digitalis treatment and 0·5 cubic centimetre was given intravenously. Within twenty-four hours the urinary output was increased to about three litres (one hundred and thirteen ounces). The following day one cubic centimetre was given intravenously and this was followed by an output of about four and a half litres (one hundred and fifty-five ounces) of urine. At this stage a pinkish, watery diarrhœa occurred which was easily controlled by a couple of doses of bismuth and opium. Two more injections were given followed by outputs of 3·5 and 1·75 litres of urine. By this time the œdema had disappeared and as the patient was very comfortable, the amount of digitalis was reduced to one cubic centimetre three times a day.

Three days later he rapidly developed a painless effusion into the right thoracic cavity about a litre (forty ounces) of clear, straw-coloured fluid was aspirated, which on examination was found to contain a fibrin web and numerous small lymphocytes. Four days later this cavity refilled and another eight hundred and fifty cubic centimetres (thirty ounces) were aspirated, the fluid showing an increase in the number of cells. There were signs of a recurrence of the fluid five days later and on this occasion the fluid was purulent and contained pneumococci. Accompanying this development were pericardial friction sounds over the whole of the cardiac area and for the first occasion there was a rise of temperature above normal. The patient died within twenty-four hours and a *post mortem* examination disclosed an acute pericarditis, an aneurysm of the ascending aorta, a dilated and hypertrophic heart and a pneumococcal empyema of the right side of the chest. Nothing abnormal was detected in the kidneys.

A CASE OF CONCEALED ACCIDENTAL HÆMMORHAGE.

By H. A. RIDLER, M.B., Ch.M. (Sydney),
Demonstrator in Obstetrics, University of Sydney; Honorary Assistant Surgeon, Royal Hospital for Women, Paddington, and The Women's Hospital, Crown Street.

Clinical History.

MRS. A.B., aged forty-one years, was admitted into the Royal Hospital for Women at 2.25 a.m. Monday, November 22, 1926. Her last menstrual period was from July 7 to July 12. She had two children, the last being fifteen years of age and had had one miscarriage six years ago.

On the Saturday morning previous to admission she complained of throbbing in the head and palpitation. She tried several times during the day to get up, but felt too sick and faint. That night she had abdominal pains and could not lie still or sleep. The pain ceased next morning. On Sunday morning she called in a medical man who told her, so the patient stated, that she was eight months pregnant. About midday she was seen by another medical man who also told her she was eight months pregnant (the patient's statement).

At 11.45 on Sunday night the patient felt a sudden gush of blood, the first vaginal hæmorrhage to occur. She was immediately sent into hospital.

On admission her pulse was 130 and temperature 38·9° C. (102° F.). Her colour was yellowish and her lips pale. Her neighbours had told her on the Saturday that her face was "deadly white"; the uterus was the size of an eight months' pregnancy, the vagina was plugged and 0·01 gramme (one-sixth of a grain) of morphine was given hypodermically; uterine contractions set in at 8.30 a.m. On Monday at 11 a.m. the pains became bearing down in character. The packing was removed and several pints of blood and clots were expelled together with a four months fœtus, placenta and membranes. There was no albumin in the urine. The patient made an uninterrupted recovery.

Comment.

A concealed accidental hæmorrhage occurring at the eighteenth week of pregnancy and distending the uterus to the size of an eight months' pregnancy is unusual.

ULCEROMEMBRANOUS STOMATITIS.

By J. HORACE DOWNING, M.B., B.S., M.Sc. (Melbourne),
Kyneton, Victoria.

THE following account is submitted on account of the failure of ordinary methods of treatment, the benefit derived from blood transfusion and the rarity of the condition.

Miss D. H., *ætatis* twenty-three years, was first seen on September 1, 1926. She was obviously ill and the breath was fœtid. Four upper molar teeth had been removed by a qualified dentist seven days previously, when the gums had not been grossly inflamed and there is no reason to suspect errors of asepsis in the extraction. Her previous history was clear and her general surroundings healthy.

The temperature was 39·5° C. and the pulse rate 120. The gums, upper and lower, were swollen and red, exuding pus around the teeth. There were areas where the gums were pink and gelatinous, like red-currant jelly and in

places some grey membrane was seen. Staphylococci were almost the only organisms found on films. The gelatinous areas later became membranous.

Without entering too far into detail, it may be stated that the following were used at one time or another: "Dakamin" solution, potassium chlorate, *liquor arsenicalis*, tincture of iodine, thymol water, hydrogen peroxide, silver nitrate solution, a mixture of iron and perchloride of mercury, low grade diphtheria antitoxic serum and "colloidal manganese," locally or internally or both. Of the mouth washes, only the first seemed to be in any way beneficial. None of the more local (swabbing) solutions appeared to have any value except cleansing.

After five weeks the patient had so far recovered as to sit out of bed a little and although there was no intermission in local treatment, the condition relapsed, the gelatinous and sloughing areas reappeared, temperature and pulse rate rising.

When treatment did not stay the local progress and when petechial hæmorrhages, a cardiac murmur and crepitations in the lungs had appeared, transfusion of three hundred cubic centimetres of citrated blood was done. The change during the next three days was dramatic. The temperature and pulse rate dropped to normal, the mouth became cleaner than at any time during the illness, sloughs separated and lines of demarcation became definite. The patient had a general sense of well-being.

However, there was another relapse and in spite of a second transfusion death occurred on October 25, 1926.

My impression is that an early transfusion would have favourably altered the course and the result.

My thanks are due to Dr. H. G. Loughran and Dr. T. L. Tyrer for their help in a somewhat trying case.

References to similar conditions in which there was no previous debilitating illness and in which no unusual organisms were found, are rare, but in Forcheimer's "Therapeusis" are recorded several types "resistant to treatment and of unknown ætiology" and of grave prognosis. Even here transfusion is not mentioned and the case is reported in the hope that my experience may be of use to anyone who meets a similar condition.

A CASE OF SCURVY.

By E. W. FRECKER, M.R.C.P. (Edinburgh), M.B., Ch.M. (Sydney),
Kiama, New South Wales.

MR. A.B., *ætatis* fifty years, a school teacher and an intelligent man complained of a "stiff and sore knee" due to a slight knock the day before. On examination there was found an extensive bluish-black extravasation of blood about fifteen by ten centimetres in the right popliteal space, extending downwards over the head of the fibula. The inner and anterior aspect of both thighs presented a remarkably speckled appearance due to the presence of a small petechial hæmorrhage around the base of each hair. The patient gave a history of bruising very easily.

He was a trifle pale, but apparently well. There were some anorexia and languor and the skin was dry, inelastic and somewhat scaly. His systolic blood pressure was one hundred and seventy millimetres and his diastolic one hundred and ten millimetres of mercury; the hæmoglobin content was 80% (Tallqvist), his urine was normal.

The mouth showed good dental care, but the gums were swollen and red; one or two teeth were a little loose and there was superficial ulceration about the necks of two lower incisors. He had been under dental treatment in Sydney for six weeks for "trench mouth" during which his mouth had improved a good deal.

Inquiry into his diet elicited the amazing fact that he had had no fruit or vegetables for seven years and "hated them like poison." His diet had consisted of meat, generally fresh (not tinned), eggs, cheese, fish and farinaceous foods, butter, no jam and very little milk.

He was assured with some difficulty that he had scurvy and departed having very unwillingly promised to take the diet laid out for him, consisting largely of fruit, vegetables and orange juice. No other treatment was adopted beyond a *placebo*. In a week the improvement was such as to convert the patient to the diagnosis and in three weeks, cure was apparently complete. The general health was more vigorous, the skin had improved in elasticity, all the hæmorrhage had disappeared and the condition of the mouth had become healthy.

The following are features of interest in the case:

1. The striking appearance of the petechial hæmorrhage around the hair follicles.[a]

2. The question arises as to the exact causation and the reason for the postponement of symptoms for seven years. It would seem that vegetables and fruit contain an abundant supply of the antiscorbutic element and other foods but small traces. On his unbalanced diet the patient suffered from a gradually increasing deficiency of this important element until at the end of seven years this deficiency became so great that the clinical symptoms of scurvy were provoked. In other words his deprivation of the antiscorbutic ingredient was not absolute, due to the fact that his diet was largely fresh meat. Hence the late appearance of the disease. Nansen and his party in the Arctic region averted scurvy for months on a diet of fresh meat, but the probability is that if they had maintained the diet over years, they would eventually have contracted the disease.

3. The blood pressure was high probably on account of the high protein diet.

4. The improvement on restoring the diet was extremely rapid. This is also the chief confirmation of the diagnosis.

In conclusion it is interesting to speculate how many larval forms of scurvy occur in our everyday practice, with ill-defined symptoms, anorexia, languor, mild anæmia and even mild stomatitis. One sees patients who respond very well to the institution of a balanced dietary. Two classes occur to mind: (i.) old, impoverished persons in lodgings living largely on tea and bread and butter and farinaceous foods, (ii.) workmen "batching" who to escape the labour of cooking indulge too largely in a menu composed of tinned food and "ham and beef" shop products.

The therapeutic test of a good diet with abundance of vegetables is well worth trying in these patients.

Reference.

[a] William Osler and Thomas McCrae: "Principles and Practice of Medicine," Ninth Edition, page 410.

Reviews.

THE WORK OF DR. EDWARD JACKSON.

NOT the least interesting parts of "Contributions to Ophthalmic Science" are the all too short biographical notes in the foreword, a portrait of Edward Jackson, revealing the puritan strength of the man, and the bibliography of his writings on page 298. This book has been dedicated to Dr. Edward Jackson in honour of his seventieth birthday by his pupils and colleagues in the United States of America.[1]

The bibliography leaves the reader amazed at the stupendous industry and unflagging zeal of Dr. Jackson. Little wonder that his *confrères* delight to honour such a man. The present volume unites under one cover a series of brilliant articles each dealing with advanced and new work in the subject chosen. Thus Ellett describes the use of suture in cataract extraction; Cohen, Killian and Metzger the chemistry of animal eyes; Wurdemann contributes an atlas of changes in the *macula lutea;* Peters writes on the general management of incipient cataract and his article may be recommended as a guide and incentive to further study in the subject.

We congratulate the editors on compiling a book of merit —a happy birthday gift to a great man.

[1] "Contributions to Ophthalmic Science": Dedicated to Dr. Edward Jackson in Honor of His Seventieth Birthday by His Pupils and Colleagues in The United States, 1926. Wisconsin: George Banta Publishing Company. Crown 4to., pp. 319.

The Medical Journal of Australia

SATURDAY, FEBRUARY 19, 1927.

Cancer Research.

THE University of Sydney has recently made a successful appeal through the activity of a special subcommittee for one hundred thousand pounds for the purpose of organizing a coordinated attack on the problems connected with cancer. A director of cancer research and treatment is now being sought. It appears that in 1921 the University received a bequest of approximately seven thousand pounds from the estate of the late J. F. Archibald for the promotion of cancer research. The Senate formed a cancer research fund with a small sum allocated for the purpose and appointed a committee of direction to consider a plan of campaign. This committee laid the proposal before the Senate that a cancer research campaign be started in New South Wales and that an institute be equipped within the University for research in connexion with malignant disease. Various committees were formed and the Publicity Subcommittee, a large body with numerous more or less unofficial groups of citizens attached, awakened a great deal of public interest in response to the expenditure of a stupendous amount of energy. It was remarked at an early stage that the medical profession held itself aloof from the movement. It would be a hazardous speculation to attempt to determine the cause of this. The readers of this journal were invited on several occasions to buy books of stamps at twenty shillings a book, but only one responded. It was pointed out that the practising portion of the medical profession is dependent to a large extent on the result of research and that it utilizes the findings of laboratory and clinical investigators without in any way contributing toward this work. It is conceivable that the arguments employed in the published appeals in the lay press and elsewhere were too fantastic or that some of the persons associated with the campaign did not possess the confidence of the profession. Be this as it may, the medical profession in New South Wales failed to lend active support to the Publicity Subcommittee. When it was realized that the appeal would prove successful, the Government of New South Wales subsidized the undertaking to the extent of five thousand pounds. The Federal Government also contributed a substantial sum of money, namely two thousand five hundred pounds. The Cancer Research Committee has now approximately £130,000 at its disposal.

While the Publicity Subcommittee was making its appeal to the public, the suggestion was put forward that part of the moneys collected should be devoted to the provision of treatment. It is not quite clear what this extension of the campaign means. Treatment always has a strong appeal to laymen; they care little about the ætiology and pathogenesis of disease, about the relationship of the pathological to the normal cell. The one objective to which they direct their attention, is the cure of a previously incurable disease. The scientist on the other hand realizes that real progress depends on a full understanding of the nature of the disease process and of the origin of this process; it is useless to seek a specific method of treatment or to attempt to devise a reliable plan of prophylaxis until the cause has been ascertained. It is therefore somewhat disconcerting to learn that the Cancer Research Committee has agreed to include treatment in the programme and is prepared to expend considerable sums of money on the purchase of X ray and other plant for the purpose of blind experiments in treatment. The wisdom of equipping a new biophysical laboratory for the purpose of studying the character of cell response to penetrating rays of definite wave lengths is not questioned. So little is known concerning the reason of the disordered overgrowth of cells in malignant neoplasms that every avenue of approach must be explored. That there is a physico-chemical disturbance associated with the formation of malignant tumours is recognized, but the extent, nature and significance of this disturbance is still shrouded in mystery.

The objects of the organization have been defined in two parts, the general and the particular. The

general embraces the prosecution of research into the origin, clinical features and methods of treatment of malignant diseases. We trust that the director will concentrate all his energies on the first section, leaving the third severely alone until headway has been made in the search for the real cause. The recording of the clinical features has been proceeding all over the world for so long, that no new organization is needed to stimulate observers to collate their experience. Among the particular objects are found the investigation of the biological, physical and chemical factors influencing normal and abnormal cellular growth. It is a very wide objective and at the present time it appears as if it were a dragnet by means of which real progress will be attained. The second section of the particular objects reads as follows: "The study of the clinical and pathological phenomena of malignancy." The wording is ambiguous. If those responsible for it intend to include histo-pathological study, with its chain of concomitants, micro-chemistry, comparative pathology, embryology and so forth, it should stand. The third and fourth sections have no real place in a scheme for research into the nature of malignant disease. They deal with the application of knowledge to improvements in the methods of treatment and the education of the public to cooperate with the medical professsion in the prevention, control and early recognition of what is popularly called cancer. How can a disease be prevented if its cause is unknown? How can it be controlled when the only treatment that offers any prospect of relief, is destruction of the growth together with a broad envelope of apparently healthy tissue? The public has provided a relatively large amount of money for this important piece of work. It is to be hoped that this money will be spent in replacing ignorance by knowledge and in substituting certainty for doubt. The Senate of the University intimates that part of the capital may be spent. Research is very costly and it must be admitted that the interest on £130,000 will be a small annual income on which to defray the expenses of an organized campaign. But if the Senate sanctions the purchase of expensive apparatus, acquiesces in the upkeep of well equipped laboratories and aims at the employment of teams of highly trained investigators receiving adequate remuneration, the whole fund will probably be exhausted before any progress has been made. It is wise to cut one's coat according to one's cloth.

Current Comment.

DILATATION OF THE BILE DUCTS.

OBSTRUCTION to the outflow of a secretion or excretion of the body leads to a sequence of events which culminate eventually in structural changes in the organ concerned. Stricture of the ureter produces hydronephrosis and the kidney substance is finally reduced to such a condition that it forms merely a fibrous sac. Ligature of the pancreatic duct in animals has been shown to cause the most profound changes in pancreatic tissue; it follows that minor degrees of blockage will result in some damage to the tissue of the organ. Obstruction of the bile ducts also produces dilatation of the biliary channels as well as changes in the parenchyma of the liver. This has been recognized for some years, but comparatively little attention has been paid to it and its clinical bearings.

Dr. V. S. Counseller and Dr. A. H. McIndoe have recently investigated the question of the dilatation of the bile ducts and have arrived at some interesting conclusions.[1] They have examined a series of twenty-six livers obtained from unembalmed cadavers at autopsy. The livers were prepared by the celloidin injection and corrosion method. In this method the liver is first of all washed by water from a tap attached to the portal vein. It is then subjected to pressure and the water is gradually squeezed out of it. It is then injected with a fluid which consists of a solution of celluloid in acetone. A pressure of + 360 millimetres of mercury is first used and this is then altered to + 200 millimetres. When hardening is complete, the liver is immersed for four or five days in concentrated hydrochloric acid. The parenchyma is caroded and after the specimen is washed in running water a cast of the biliary tree remains. Specimens of a similar nature to this were shown at the International Congress of Medicine in London in 1913 by Professor B. Wahby, of Cairo. Professor Wahby prepared his specimens by the injection into vessels of a fusible alloy. By this method he succeeded in producing perfect specimens of arteries and veins of various organs, bile ducts and trachea and bronchi. The livers examined by Dr. Counseller and Dr. McIndoe were of four types, normal livers, livers affected by cholecystitis, livers after cholecystectomy had been performed and livers affected by benign or malignant stricture of the bile ducts. The calibre of the ducts was measured by means of callipers and a screw gauge. The common and hepatic ducts in ten normal livers had a diameter varying from 2·1 to 4·8 millimetres. Five millimetres were taken therefore

[1] *Surgery, Gynecology and Obstetrics*, Decembers, 1926.

as the limits of normality in this situation. Similarly measurements were made with branches of the second, third, fourth and fifth order.

In the case of eight livers previous clinical examination had failed to reveal any evidence of previous biliary disease and the presence of gall stones in the gall bladder and their absence from the common duct were discovered only at autopsy. In these circumstances it appeared fair to exclude the effect of stones in the common duct in considering changes produced. In seven instances evident dilatation of the ducts had taken place. The increase was fairly uniform throughout, but greatest in the extrahepatic ducts. It was found that the amount of dilatation of the ducts ran parallel and was directly proportional to the amount of pathological change in the gall bladder wall and to its loss of function. At the same time it is not concluded that loss of function is the sole factor in producing the dilatation. Livers examined after cholecystectomy had been performed yielded no information of value. Death had occurred eight, nine and ten days after the operation. No change could be attributed to the operative loss of the gall bladder. In the group of benign and malignant strictures the ducts were extensively dilated. The variation in diameter of the hepatic ducts lay between ten and thirty millimetres and the measurements of the other channels were in proportion. There was a more abrupt change from the finest terminal ducts to the widely dilated channels of the main trunks which manifested early sacculation of their walls.

In discussing their work Dr. Counseller and Dr. McIndoe refer to the analogy drawn by Weber between this condition of dilatation of the bile ducts and hydronephrosis. McMaster, Broun and Rous compared these conditions and proposed the term hydrohepatosis as suitable for the biliary condition. Dr. Counseller and Dr. McIndoe have adopted this name and they point out that in both conditions secretory stasis, dilatation of ducts, vascular disturbance from collateral pressure, sclerosis and parenchymatous atrophy are the rule. They do not accept the classification of hydrohepatosis of McMaster, Broun and Rous into concealed and manifest types depending on the concentrating activity of the gall bladder. They hold that such a classification only confuses the issue. They regard as the important point the obstruction and resulting dilatation rather than its physiological modification by extraneous influences. The flow of bile into the duodenum is controlled by the sphincter of Oddi. Judd and Mann have shown that the extrahepatic ducts dilate after cholecystectomy, but that dilatation is prevented by section of the sphincter and Rost has found that dilatation does not occur when the tonus of the sphincter is low. Further it has been shown that when cholecystitis is produced by a specific organism, the concentrating power of the gall bladder is lost. Dr. Counseller and Dr. McIndoe conclude that the absence of the concentrating and consequently "safety valve" action of the gall bladder either by disease or removal produces a generalized hydrohepatosis due to pressure in the duct against the tonic sphincter.

It appears that Dr. Counseller and Dr. McIndoe have not carried their investigations far enough. Their observations on livers after cholecystectomy are inconclusive. Dilatation of the bile dcuts was less pronounced in one case of cholecystectomy in which a fistula had existed between the gall bladder and the transverse colon. It should not be a matter of great difficulty to carry out similar observations on the livers of persons who had been subjected to cholecystectomy some years before death. The sphincter of Oddi controls the flow of bile into the duodenum and this control is in all probability exercised as the result of hormonic action. The presence of a pathological lesion in the wall of a gall bladder will interfere with the hormonic stimulus to the sphincter. As a result of this interference spasm of the sphincter may be produced and back pressure of bile in the ducts will result. Dr. Counseller and Dr. McIndoe make no reference to the hormonic action controlling these functions. When a diseased gall bladder is excised, at any rate one factor in disordered hormonic action is removed and readjustment can take place. Even if atrophy of liver cells has occurred, which is unlikely, regeneration will probably take place. The liver has markable powers of recuperation, as was shown first by Ponfick. Dr. Counseller and Dr. McIndoe are unable to say whether dilated ducts will return to their original size after drainage, but hold that experimental evidence points in that direction. The practical point to be borne in mind as a result of this work is that stones in the common duct and stricture arising from a previous operation may cause dilatation of the biliary channels and that operative interference should be undertaken before permanent changes have resulted.

THE JOURNAL OF THE MEDICAL ASSOCIATION OF SOUTH AFRICA (BRITISH MEDICAL ASSOCIATION.

THE happy outcome of the visit to South Africa of Dr. Alfred Cox, Secretary of the British Medical Association, has already been mentioned in these columns. A medical profession which was divided against itself, has been united and welded into one organization expressive of the national aims of the country. The name, Medical Association of South Africa (British Medical Association) indicates both its national character as a scientific body of the Union of South Africa and the link with the Old Country. The logical outcome of the formation of this Association has been the establishment of a journal which will act as its special organ. The *South African Medical Record* and *The Medical Journal of South Africa* have ceased publication and *The Journal of the Medical Association of South Africa* (*British Medical Association*) has arisen to carry on their traditions. The first issue of this journal which is published in Capetown, has come to hand. Its official languages will be English and Africaans. Members of the British Medical Association in Australia will join in wishing the new journal in South Africa a long and useful life.

Abstracts from Current Medical Literature.

DERMATOLOGY.

Dermatitis from Emetin.

G. GALEWSKY (*Wiener Medizinische Wochenschrift*, July 10, 1926) describes three cases of dermatitis observed in workers in a laboratory where emetin was being extracted from ipecacuanha roots. No similar cases had been noted for a considerable period. One patient was a chemist and the others were workers whose duties comprised boiling the roots and extracting with etherial solutions. The dermatitis which was severe was localized to the hands and forearms and to a less extent to the face and behind the ears. The dorsal surface of the hands was more implicated than the palmar, whilst the extensor aspect of the forearm was infected less than the flexor. Recovery occurred after abstinence from work for a considerable period. No recurrence was noted. Tests for idiosyncrasy to the drug were not made. The prominent feature of the attack was the limitation of the eruption to below the elbows and the freedom of the palms.

Dermatitis of the Diaper Region in Infants.

J. V. COOKE (*Archives of Dermatology and Syphilology*, November, 1926) states that the erythema of Jacquet in infants is really a *dermatitis venenata* due to the action of a non-pathogenic, non-motile Gram-positive bacillus (*Bacterium ammoniagenes*) on urea with the production of ammonia. This bacillus is constantly present in the fæces of these infants especially in those that are not breast-fed. The skin lesions which are erythematous and papulo-vesicular, must be distinguished from an ordinary intertrigo by the fact that it attacks primarily the convex surfaces. The suggested therapy which the author stated is now used almost as a routine by American pædiatricians, is a final rinsing of the diaper after washing in a 1 in 4,000 solution of perchloride of mercury solution. The diapers are then wrung thoroughly and allowed to dry. The impregnation of the dry diaper with mercury inhibits the growth of the bacteria.

Calcification of the Skin Including the Epiderm in Connexion with Extensive Bone Absorption.

F. D. WEIDMAN AND L. W. SHAFFER (*Archives of Dermatology and Syphilology*, November, 1926) claim to report the first case of calcification of the skin in which epithelial structures were involved. They hold that other cases have concerned only the collagenous parts. The peripheral nerves were also affected. Extensive histological findings of skin sections are recorded. The patient was an old man of seventy years with senile elastosis who was the subject of some fatty dyscrasia, the fats being readily discharged from the blood especially into certain epidermal cells. In the presence of excess of calcium salts the fats were replaced by calcification according to the ideas of Klotz. The process of calcification was regarded as a calcareous metastasis owing to the definite resorption of the bone. The evidence of calcium in the sweat ducts and not in the coil glands may indicate specific secretory propensities of different portions of the sweat apparatus.

Sclerema Neonatorum.

A. M. H. GRAY (*Archives of Dermatology and Syphilology*, December, 1926) reports a further case of *sclerema neonatorum* and goes into the history and clinical aspects of four or five reported cases. Some interesting histological and chemical investigations were made on the fat of one infant. Histologically the most striking change noted was a thickening of the trabeculæ between the fat lobules. From these trabeculæ there was an invasion of masses of cells into the surrounding fat. These fats were chiefly fibroblastic giant cells, lymphocytes and a few leucocytes. The chemical examination of the subcutaneous fat disclosed numerous crystals which Harrison investigated and concluded were neutral fats. The nomenclature of this condition is also discussed as well as its confusion with *Œdema neonatorum* and *Scleroderma neonatorum*. *Œdema neonatorum* appears to be a true œdema and more easily recognizable as such. Scleroderma in its diffuse form may be confused with sclerema, but scleroderma does not occur in sharply defined plaques and nodules, but in diffuse, ill-defined areas.

Arsenic as an Ætiological Factor in Eczema.

B. THRONE, L. S. VAN DYCK, E. MURPLES AND C. N. MYERS (*New York State Journal of Medicine*, October, 1926) assert that arsenic is the contributing factor in the ætiology of 10% of all the eczema in their clinic. A discussion of fifty-five cases is presented. It has been demonstrated that the typical disturbances of sugar and chloride metabolism are generally present and that the eczema is a problem of œdema resulting from injury from within. The investigations show that there are "tides" of arsenic excretion in which there is an "ebb" and "flow" of arsenic. The eczema will clear up only when these deposits are reduced to a subminimum. The arsenic deposits are removed by the persistent use of sodium thiosulphate in a freshly prepared solution. The arsenic is capable of demonstration in the urine. Eczema follows the ingestion of arsenic through foods. The condition is treated therapeutically by means of restricted carbohydrate intake by a nearly salt-free diet and by intravenous injections of thiosulphate of soda.

Basal Metabolism in Ichthyosis.

A. PORTER (*British Journal of Dermatology and Syphilis*, December, 1926) gives an account of a series of cases of ichthyosis in which the basal metabolic rate was investigated. A number of children over eight years of age were tested. A control rate of fourty-four calories per hour per square metre of body surface was obtained for ten healthy children. Other facts, such as the severity of the condition, whether or not breast feeding had been used, the result of thyreoid medication, were also tabulated. The basal metabolic rates in the ichthyotic children varied from − 33 to + 22 and it was found that the lower the metabolic rate, the more rapid and definite is the improvement with thyreoid medication. The estimation of the metabolic rate is the most certain method of deciding whether a patient is likely to benefit from the administration of thyreoid extract. The basal metabolic rate in six mothers of ichthyotic children was also taken and in four out of the six cases it was about normal and normal in the remaining two. This would support the view that ichthyosis in the child is frequently accompanied by hyperthyreoidism in the mother. The basal metabolic rate was highest above normal in the case of a woman who had nine ichthyotic children, only one of whom had a dry skin before being weaned.

RADIOLOGY.

Carcinoma of the Tongue.

DOUGLAS QUICK publishes a report on his results in treating carcinoma of the tongue (*British Journal of Radiology*, March, 1926). Tongue carcinoma is very difficult to deal with, having rich blood and lymphatic supplies and being subject to great irritation from bad teeth. Cancer of the tongue terminates fatally in from 75% to 90% of cases and, if untreated, the patient rarely lives two years. Radium emanation tubes are used, but before the primary lesion is treated, external applications of X rays or radium packs are employed in order to inhibit the growth and obviate the possibility of implanting tumour cells beyond the base of the growth if the emanation needles are passed through malignant tissue. Bare glass tubes containing one millicurie are passed into the growth and the emanation diminishes by about 15% daily, so that a calculation of the total dosage derived from a one millicurie tube will approximately show one hundred and thirty-two millicurie-hours of radium energy. This dosage is distributed over a fortnight, giving prolonged radiation and great total dosage. The author attempts to use a one millicurie tube to each cubic centimetre of tumour tissue. The sharp reaction following the insertion of the tube leaves the tongue swollen for from four to eight weeks. Sloughs and hæmorrhage may occur, especially when mixed infection is present and pain is severe; difficulty in feeding also occurs. If sloughing is very severe, it is wise to ligature the external carotid artery with its lingual and facial branches

under local anæsthesia. The glandular areas are treated by high voltage X rays and γ radium rays. The X rays have greater effect on the connective tissue and the radium rays on the capillary blood vessels and by combination of the two, more uniform effects are produced. After a period of seven years 20% of patients treated are free clinically from the disease and these figures compare well with the best surgical figures for the operable group of tumours alone. In conclusion the author points out the great relief given to patients whose condition is absolutely hopeless from the beginning.

Non-Opaque Foreign Bodies in the Lung.

W. F. MANGES (*British Journal of Radiology*, April, 1926) deals with the X ray diagnosis and localization of non-opaque foreign bodies in the air passages. A great percentage of inhaled foreign bodies is not sufficiently dense to cast a shadow and yet the foreign bodies are extremely dangerous to the patient. In the presence of an opaque foreign body the skiagram may be taken at any stage of respiration, but in non-opaque cases the film must be exposed at both inspiration and expiration and the exposures must be of the shortest duration. Non-opaque foreign bodies produce more inflammatory reaction than metallic or inorganic bodies. Patients under two years of age manifest more acute inflammatory reactions than those over two. The author describes the usual symptoms met with after inhalation, namely coughing attack lasting for a long period, possibly a quiescent stage and then bronchitis. If large, the foreign body causes alarming dyspnœa and breathing is carried on to a great extent by the accessory muscles of respiration. Four types of change take place in the lung: (i.) obstructive emphysema, (ii.) atelectasis, (iii.) drowned lung, (iv.) lung abscess. Any one may be present alone or in combination. Obstructive emphysema is interpreted on the film by (i.) increased transparency of the affected lung or portion of lung, (ii.) depression and limitation of the diaphragm on the affected side, (iii.) displacement of the heart and mediastinal contents to the unaffected side on expiration. If the result is doubtful a further examination is made in a few hours' time or in a couple of days, because with the onset of inflammatory change some obstruction will occur and become evident on the film. Fluoroscopy is best for determining the displacement of the heart on expiration. When the body is in the trachea one notices little difference in the lung on inspiration and expiration, there being always an excess of air present and on the diaphragm moving downwards the heart has the appearance of being left suspended in the chest. In tracheal obstruction the heart is rotated with the apex forward. Atelectasis occurs when there is complete blockage to inspiration. Exudate into the blocked lung gives rise to a "drowned lung" and is usually associated with some atelectasis. Abscess may occur at any stage. The following technique is used: Eighty milliampères, sixty kilovolts current, ninety centimetres distance, one-thirtieth to one-fifteenth of a second, double screens and duplitized films.

Myositis Ossificans Progressiva.

L. F. MACGRUDER reports a case of *myositis ossificans progressiva* (*American Journal of Roentgenology*, April, 1926). The condition was present at birth and the patient did not remember ever having moved his neck, but he managed to earn his living until at sixteen he had a fall from a bicycle and afterwards developed pains in the hips, shoulder and right elbow and these joints were ankylosed in three months. The patient has free movements in the other joints, but cannot sit down. X ray pictures reveal ossification of the *ligamentum nuchæ* and large shafts of bone fix the scapula to the humerus on each side and the right elbow is fixed by heavy shafts of new bone anteriorly. Both hips are fixed by shafts of bone extending from the pelvis to the femoral shafts below the lesser trochanters. Examination of sections revealed the new bone to be normal in structure. Probably the ossification has its origin in the intramuscular connective fascia and aponeurosis, following capillary hæmorrhage. Microscopically it is identical with the traumatic form of *myositis ossificans*.

Chronic Gastritis.

A. BASSLER (*American Journal of Roentgenology*, April, 1926) contributes an article on X ray signs in chronic gastritis. There are certain signs of simple and chronic gastritis which are not always present, but when present they are pathognomonic. In chronic gastritis the regular line of the curvatures is changed in appearance and small indentations and bulgings appear especially along the greater curvature of the distal third of the stomach and the whole organ appears "bag-like" and inactive as far as normal peristalsis is concerned. The whole peristaltic mechanism is thrown out of gear and instead of regular waves there are irregular and incomplete contractions. These typical irregularities are seen when the patient is prone and but rarely appear when skiagrams are taken in the standing position. At later stages there is dilatation of the organ.

Impaction of the Metatarsal Head.

K. T. MEYER (*American Journal of Roentgenology*, July, 1926) reports a case of impaction of the head of the second metatarsal bone. This condition is also known as Köhler's metatarso-phalangeal syndrome or deforming metatarso-phalangeal osteochondritis. The ætiology of the condition is unknown. It occurs more frequently in females than in males. The second metatarsal is nearly always involved. It occurs between the ages of ten and eighteen years. The pathological changes at times result in necrosis, at times in the formation of fibrous marrow with granulation tissue, thickened cortex and well preserved cartilage. The symptoms are localized pain with sensitiveness to pressure and possibly some swelling. Skiagrams reveal broadening of the metatarso-phalangeal joint space, flattening of the head of the neck and distal portion of the shaft and bone absorption changes.

Ileal Stasis.

J. L. KANTOR (*American Journal of Roentgenology*, July, 1926) discusses the clinical significance of ileal stasis and its association with chronic colitis. The study is based on observations made in one hundred and sixty-one cases after barium meal examination. The author suggests the following technique for study of these ileal conditions. Administer the barium meal at zero hour. If the stomach is not empty, either discard the examination entirely or else continue it until the stomach is empty and make corresponding changes in the rest of the examination. Administer a mixed meal at six hours. Observe the ileal emptying time at nine hours (or at least four hours after the stomach is empty). Ileo-caecal insufficiency by enema cannot be taken as a safe criterion of ileal stasis. Stasis occurred in 62% of one hundred and sixty-one patients. Sex and age have no bearing on the frequency of ptosis. Ileal stasis is more commonly associated with caecal stasis than with constipation in general. A mechanical obstruction of the colon does not seem to produce an ileal stasis.

Metastatic Carcinoma in Bone.

J. H. LUSCINIAN reports two cases of metastasis in bone (*American Journal of Roentgenology*, June, 1926). Characteristic metastasis is characterized by an irregular moth-eaten appearance of the bone with little or no evidence of reaction. These areas vary considerably in size and shape and distribution. They may be localized or widely diffused and their borders well defined or indefinite. More commonly ring-like shadows of diminished density appear surrounded by a varying amount of increased density in bone. An attempted reaction in the bone to limit the process is seen. The extent of reaction depends on the relative malignancy of the primary tumour. The more malignant tumours are accompanied by little bone production. On the other hand slow growing carcinoma manifests little disposition to metastasize, but when metastasis does take place, the hyperplasia of bone is out of proportion to the destruction. Dull pain may be a cause of complaint and it is usually worse at night. The differential diagnosis must be made from "marble bone" disease and *osteitis deformans*. In the latter disease the arm and leg are more likely to be affected, while bone metastasis in these regions is rare.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE VICTORIAN BRANCH OF BRITISH MEDICAL ASSOCIATION was held at Bendigo on October 23, 1926. The meeting which comprised an afternoon and an evening session, was held at the invitation of the Bendigo Subdivision. The chair was occupied by DR. PAUL ROWAN, President of the Bendigo Subdivision.

AFTERNOON SESSION.

A visit was made to the Public Health Laboratory of the Commonwealth Department of Health where a radiological demonstration and a demonstration of pathological specimens was held. The remainder of the programme was carried out at the Bendigo Hospital.

Skiagrams and Pathological Specimens.

Demonstrations of the radiography of the alimentary, renal, biliary, skeletal and respiratory systems were carried out by Drs. A. E. Ffrost, M. Jacobs, W. J. Long, T. C. Ker and T. E. Green. The modern X ray equipment was exhibited by Mr. C. M. Nott and demonstrations of pathological specimens and bacteriological preparations were given by Drs. Paul Rowan and H. D. McIntosh.

Periodical Cyanosis Followed by Melæna.

DR. M. JACOBS showed a patient, a girl, aged five years and ten months, whom he had first seen on October 19, 1923. The patient had complained of cough and headache of two days' duration. She had vomited after a drink and became hot and flushed. The bowels had acted. The first part of the stool was yellow and the last part tarry. The patient had been put to bed and after having a drink had vomited a large quantity of blood some of which was clotted. She had complained of pain in the chest on the previous day. Her temperature had been 37·7° C. (101·8° F.) and the pulse rate 108 in the minute. The heart sounds were clear. No tenderness had been present in the abdomen. The patient's progress had been good until October 31, 1923, when she passed a little bright blood by the rectum. Some little time after this Dr. Jacobs had noticed a considerable enlargement of the spleen and blood examination had failed to reveal any abnormality.

Dr. Jacobs explained that from that time the child had been suffering from periodical attacks of cyanosis. As a rule she suffered from melæna two days after the cyanosis and felt nauseated. She had not been able to walk much for three years and abdominal distension occurred. The spleen was not palpable and a blood count three weeks prior to the meeting had yielded the following results:

Erythrocytes, 5,860,000 per cubic millimetre;
Hæmoglobin value, 60%;
Colour index, 0·5;
Leucocytes, 8,000 per cubic millimetre;
Polymorphonuclear cells, 71%;
Small lymphocytes, 24%;
Mononuclear cells, 3%;
Eosinophile cells, 2%.

No abnormality had been seen in the film with the exception of some poikilocytosis and the presence of an occasional microcyte. Dr. Jacobs said that he showed the patient in the hope that some suggestions would be made in regard to diagnosis and treatment.

DR. S. O. COWEN said that he found himself at a loss to make any constructive suggestion with reference to the patient shown by Dr. Jacobs. It seemed clear that the condition was not that of Banti's disease on the grounds of fluctuation in the size of the spleen and the intermittent nature of the symptoms. The subjects of polycythæmia were prone to gastric and duodenal hæmorrhage and consequent melæna, but he could not reconcile the intermittent character of the attacks with any of the known types of polycythæmia. The count of the patient's red blood cells and the percentage of hæmoglobin were also inconsistent with a state of polycythæmia.

DR. H. FLECKER suggested that a radiological examination of the chest be carried out with a view to the elucidation of the cause of the cyanosis.

DR. J. F. WILKINSON said that it had occurred to him from analogy with paroxysmal hæmoglobinuria that it might be well to undertake a spectroscopic examination of the blood for methæmoglobin in the case of the patient shown by Dr. Jacobs. It might be that repeated crises of blood destruction were occurring such as underlay paroxysmal hæmoglobinuria.

Congenital Hemigiantism.

DR. A. E. FFROST presented a boy, aged eleven years, as providing an example of congenital hemigiantism. The whole of the right side of the body was uniformly larger than the left; the asymmetry was to be observed even in the tongue. The boy enjoyed good health, was bright mentally and upon inquiry it was ascertained that no difficulty had attended his birth.

DR. H. DOUGLAS STEPHENS said that he had recently seen several children in whom one side of the body was symmetrically larger than the other and he had been much interested in certain associated conditions. Only a week previously a child had been brought to him who showed a retardation of growth affecting the whole of the left side of the body; in this instance he regarded the smaller side as pathological. The parents of this child sought advice on account of repeated attacks of severe vomiting which she suffered, and were little disturbed by the bodily asymmetry. The child was prone to severe attacks of vomiting which occurred every four or six weeks, lasted for two days and left her completely exhausted. She was an only child and at her birth delivery had been difficult. She displayed no manifestations of epilepsy. The attacks of vomiting bore no relation to indiscretions in diet, but were frequently induced by any unusual excitement; they were not accompanied by headache or other pain. He was disposed to regard them as of nervous origin and similar to migrainous attacks in adults. In this child the smaller side of the body was growing *pari passu* with the larger.

In another child, an Assyrian, hemigiantism had induced scoliosis by affection of the bodies of the vertebræ. This particular child was literally covered with telangiectasis and radiograms in her case were suggestive of a degree of achondroplasia. He recollected a published case record in which achondroplasia was described as affecting one side of the body and it had been stated that this disease might be limited to one limb.

In the case of another child who exhibited bodily asymmetry, he formed the opinion that it was due to a unilateral malformation of the circulatory system as there were indications of a defective blood supply on one side of the body and clinical signs of a congenital cardiac lesion. There was, however, no evidence of a general transposition of viscera. He had recommended the application of massage, hot and cold douches and diathermy to the affected side.

Multiglandular Enlargement.

Dr. Ffrost's second patient was a man, aged forty years, who displayed a widespread enlargement of the lymphatic glands. He first consulted Dr. Ffrost for an injury to his elbow joint and it was then discovered that his feet were odœmatous and that the inguinal, abdominal and axillary lymphatic glands were enlarged. The examination of his blood revealed that the total leucocyte count was 17,000 per cubic millimetre; of these 70% were small lymphocytes. No evidence of syphilis had been obtained by the application of the Wassermann test to the patient's blood serum.

DR. IAN MACNEIL suggested the excision of a gland for histological examination.

DR. S. O. COWEN said that he considered that Dr. Ffrost's patient was in all probability affected by chronic lymphatic leuchæmia, the low total leucocyte count notwithstanding. In the first six months of this variety of leuchæmia the proportion of mononuclear cells was of much greater significance than the total count and he was disposed to place much reliance on the fact that 70% of the white cells were small lymphocytes. He anticipated that this patient would do well if he were given the advantage of X ray treatment and mentioned the case of a patient affected with chronic

lymphatic leuchæmia who had been maintained in comparatively good health for eleven years by means of periodical irradiation. He knew of no drug that was of use. Benzol had been tried, but in his opinion not very rationally. The use of benzol which depressed cell activity in the bone marrow, was based on the assumption that the lymphocytes originated in the bone marrow, but this was open to question. X ray treatment offered the best prospect of securing to the patient some years of useful life.

DR. H. FLECKER said that he thought a single moderate dose would be of greater utility than repeated small doses of X rays. In his experience the response to irradiation was not so good in lymphatic leuchæmia as in splenomedullary leuchæmia and in Hodgkin's disease.

DR. J. F. WILKINSON said that he agreed with Dr. Cowen's suggestion as to the probable diagnosis. Lymphatic leuchæmia was seen in all grades of intensity and chronicity. He did not consider that benzol was an appropriate drug in this instance. Dr. Cowen had rightly emphasized that if benzol were employed, it was essential that the blood cells be enumerated regularly and systematically in order to avert too great depression and aplasia of the bone marrow. He would be inclined to resort to the old and tried remedy, arsenic, in the treatment of this particular patient.

DR. M. D. SILBERBERG pointed out that it was necessary also to watch for indications of destruction of red cells during the administration of benzol. He referred to the fact that achlorhydria had been observed in splenic anæmia, lymphatic and spleno-medullary leuchæmia. These findings suggested that the deficiency in the gastric hydrochloric acid resulted in the absorption of different toxins which affected hæmatogenesis in different ways.

Osteogenesis Imperfecta.

DR. T. E. GREEN showed a child, who had suffered from numerous fractures of the bones of the lower extremities. The left tibia had been fractured in its lower third when the patient was nine months old. The right tibia had been fractured at the junction of the middle and lower third when the patient was one year and nine months old. The right thigh had been fractured when the patient was two and a half years old. The left thigh had been fractured when the patient was four years old and the right thigh had been fractured immediately above the knee joint when the child was four years and seven months old. To remedy the deformity of the left tibia an operation had been carried out five weeks previously, a wedge-shaped piece of bone and a periosteum being removed.

Dr. Green pointed out that the patient's sclerotics were blue and that no fractures had occurred in the bones of the upper extremity or in the ribs. Radiological examination revealed that bone formation was better in the upper than in the lower limbs. No abnormality could be discovered in the head. The family history was good.

Spastic Paraplegia.

Dr. Green also showed a male patient, aged seventeen years, who suffered from spasmodic contraction of the back, legs and arms. This contraction was always present and was exaggerated by effort or excitement. It had been present since birth and the patient had never been able to stand or walk. He could not feed himself. His mentality was moderately good and his sight and hearing were good. He could converse with his parents and had perfect control over the bowels and bladder. He had frequently suffered from severe spasms of the back and arms, but these had become less as a result of treatment. He was a first child and had been born as the result of instrumental delivery. Both father and mother were healthy. His serum had not reacted to the Wassermann test. He had been operated on in 1924 by Dr. Norman Royle without apparent benefit.

DR. H. DOUGLAS STEPHENS said that he was doubtful whether the lesion was entirely cortical. The general features of this patient were to him very suggestive of lenticulo-striate degeneration. He recollected a *post mortem* examination of a child who resembled the boy shown by Dr. Green very closely, and at the autopsy an old hæmorrhage at the base of the skull was disclosed. There was no cortical affection. The subjects of lenticulo-striate degeneration were capable of appreciating remarks and of answering questions, although speech was halting owing to the rigidity of the muscles of phonation. The intelligence, though low, was by no means idiotic and gradually improved with age and educative measures. They exhibited distressing athetoid movements and opisthotonic retraction and the tendency in these respects was to progress. He had no experience of the intrathecal administration of magnesium sulphate in this type of patient and he was not prepared to advocate the Royle operation. In some general remarks on the Royle operation Dr. Stephens said that he had observed no dramatic results. Parents had said that the limbs seemed less rigid and that the child's power of walking had improved. He considered that the operation should be performed for the relief of spasm, but had found that it was generally not successful in eliminating severe adductor spasm. He had found that the ultimate result was much more satisfactory when the operation was followed by that of Stoeffel or by tendon operation.

DR. ROBERT SOUTHBY referred to a child whom he had observed for eighteen months at the Children's Hospital and in whom the athetoid movements and spasticity, as also the arching of the back were just as pronounced as in the child shown by Dr. Green. The *post mortem* examination had disclosed a diffuse sclerosis of the brain, cerebrum and cerebellum being uniformly "leathery" in consistence.

MR. VICTOR HURLEY said that the Royle operation had been subjected to much criticism both in Australia and abroad and it was perhaps a fair summary of such criticism to say that, though the operation was properly performed, the results yielded by the operation had not realized expectations.

Broadly speaking, in the third patient shown by Dr. Green the indications for the operation were fulfilled, spasticity being associated with good muscle power. The underlying principle of the operation was the double innervation of muscle, one system governing motor power and the other plastic tone. That such double innervation existed had been abundantly proved by the late Professor Hunter, but it was not certain that the non-medullated fibres belonged to the sympathetic system. That they did so had been denied by some neurologists and if they did not, there was no basis for the operation.

He had gathered from a report of a recent discussion at the Royal Society that the view was being taken that the immediate results might well be explained on the ground of the vasomotor changes induced by the operation. The subject has recently been discussed by the Surgical Association in Melbourne, most of the contributors having had personal experience of the operation. Of fifteen or twenty patients reviewed definite improvement was established in only one or two and in these it had been difficult to decide whether the credit was to be allotted to the operation or to the measures taken subsequently for muscle reeducation.

MR. W. KENT HUGHES referred to two cases of Raynaud's disease in which improvement had followed the operation of ramisection; such improvement had been maintained for six months to his knowledge. He had been informed also of the application of the principles of the operation to Hirschsprung's disease by Dr. R. B. Wade and of the striking immediate result which followed. It might be that in many cases of failure the operation had not been performed in the manner set out by Dr. Royle.

Little's Disease.

Dr. Green's third patient was a child, aged six years, who had been sent for treatment by Dr. Ettelson, of Swan Hill. The child had been breast-fed at first and later on "Lactogen" had been given in addition. The child had begun to crawl at the age of ten months. The mother had noticed that the left knee was apparently enlarged and that there was a tendency of the left leg to be bow shaped. Later on a condition of muscular spasm had developed with arching of the body to the right side. This rigidity had been present ever since and became exag-

gerated when the patient was excited. During sleep which was poor, the spasm disappeared. When the spasm was present, the thighs became flexed on the abdomen and adducted. The knee and ankle joints were extended. The right leg was adducted over the left. The arms were abducted at the shoulder with flexion at the elbow, the forearms were pronated. The knee and elbow jerks were exaggerated. The child's intelligence was moderately good and he talked with his parents. The family history was good. The mother had seventeen children, the patient being the sixteenth. The head was somewhat large and the fontanelle was closed. No abnormality could be seen in a skiagram of the skull. The serum had not reacted to the Wassermann test. Lumbar puncture had yielded clear fluid at slightly increased pressure. The fluid was sterile and contained no globulin. It had not yielded a response to the Wassermann test. The patient had been slightly improved with sedative treatment.

Friedreich's Ataxia.

Dr. Green also showed a patient, aged twenty-seven years, who was unable to walk on account of deformity of the feet and lack of muscular control. He was well nourished and exhibited pronounced *pes cavus*, scoliosis and nystagmus. His speech was of the staccato type and unsteadiness in the movements of his hands was occasionally noticeable. Both knee jerks were absent. The pupillary reflexes were normal. The circulation was very poor in both lower limbs, they were swollen and manifested a tendency to trophic disturbance. His intelligence was good. The sphincters acted in a normal manner. The family history was good. The condition had first appeared when the patient was ten or eleven years of age.

Dr. Green also showed a male patient, aged fifty-six years, who was suffering from muscular disability of the upper and lower limbs. The patient had first noticed a deformity in walking (like stringhalt) when he was ten years of age, but had done ordinary farm work until he was forty-five years old. At the age of twenty he had noticed some deformity of the feet, but this was not in any way characteristic, the tendency was towards a condition of flat foot. The patient's gait was erratic, especially in the dark, and he had to watch his feet carefully. He could walk uphill better than down and he easily became tired. His sphincters acted in a normal manner. His hands were affected to a considerable degree, especially in regard to extension. Partial wrist drop was present on the left side and it was complete on the right. No nystagmus was present. Definite scoliosis was noted. All the deep reflexes were absent. No pupillary defects could be discovered. The patient's mentality was good. Two of the patient's sisters suffered from the same complaint. One was older and the other younger than the patient.

Myelitis.

Dr. Green's next patient was a female, aged twenty years, who suffered from contraction and loss of power in the legs. The patient had first complained on February 20, 1924, of pain in the back, but was able to go to work. After an hour she had complained of severe pain in the abdomen and felt sick, but was able to walk home. After arrival at home she lay down and went to sleep for an hour and a half; on waking she had tried to get up, but was unable to do so. She had felt "useless" from the waist downwards. The pain had gone and did not return. All sensation in the legs was lost, but this had gradually though not completely returned. The return of sensation had begun about four months after the onset of the illness. On the day of onset the patient had vomited and since that time had complained of attacks of weakness with vomiting until twelve months before the meeting. No headache had been present. The patient had lost control of the bladder and rectum. On the first day of her illness it had been necessary to catheterize the bladder and this was continued for two months. The power of micturition had returned quite suddenly, but the patient was not able to control it. At the time of demonstration the control was better, but far from normal. The bowels were constipated and the patient had but poor control over the *sphincter ani*. A blister had formed on the sole of each foot on the day of onset of the illness. Later on the patient had been able to walk a few steps. The patient had gone to the Melbourne Hospital on June 29, 1926, and while she was there her temperature had risen to 40·5° C. (105° F.). Lumbar puncture and X ray examination had failed to reveal any abnormality and no reaction had been obtained to either the Wassermann or the Casoni test.

Mitral Regurgitation.

Dr. Green's next patient was a woman, aged twenty-three years, who had been admitted to hospital fourteen years previously with an indefinite throat condition. After being in hospital for one week she had been discharged because examination of throat swabbings had revealed no pathogenic organisms. Shortly after this she had become affected by chorea and unfortunately was allowed to go about and travelled to Ballarat. From this city she had returned very ill. Cardiovalvular disease had then been present. The patient had been put to bed, but in spite of rest and treatment there had been a gradual appearance of œdema of the legs and body, ascites and swelling of the left arm up to the shoulder. Her breathing had become so distressed from intraabdominal pressure that *paracentesis abdominis* was performed, more than five litres of fluid being withdrawn. After the relief of pressure, the digitalis had been able to act and all the œdema had disappeared. The patient had then kept in bed for twelve months and was then able to get up, though she was still short of breath on exertion and liable to cardiac attacks. At the time of demonstration there was definite evidence of permanent damage to the mitral valves with a systolic bruit, reduplication of the second sound and displacement of the apex beat. Dr. Green said that the patient's history served to illustrate the wonderful recuperative power of the heart in childhood.

Rheumatic Endo-Pericarditis.

Dr. Green also showed a patient, aged sixteen years, who had suffered from an attack of acute rheumatism four months previously accompanied by pericarditis and endocarditis, the latter affecting particularly the aortic valve. The breath sounds over the base of the left lung had been distant. The pleura had been tapped and about 180 cubic centimetres of fluid had been removed. The temperature at this time had been 39·4° C. (103° F.), but became normal in three days. A pericardial friction sound had been present, a double aortic bruit was heard and there was evidence of enlargement of the heart. The signs at the left base had gradually become normal and at the time of demonstration the entry of air into the lung was good. The patient had suffered from a previous attack of rheumatism six years ago.

Cerebral Tumour.

DR. T. E. GREEN AND MR. VICTOR HURLEY showed a female patient, aged twenty-eight years. She had been married for three years and had one child. According to her history taken on May 14, 1926, she had complained of buzzing in the left ear for two and a half months, continuous, except during sleep. The vision which had been impaired for three weeks, was getting worse and the patient complained of frontal headache. She had vomited once or twice after severe headache. She had not complained of giddiness and could walk well. There was no loss of power or sensation. The patient's ears had not discharged, no earache had been present and no tremor. The temperature had been normal, the pulse rate 72 and the respiratory rate 18 in the minute. The systolic blood pressure was 120 millimetres of mercury. The patient had suffered from pyorrhœa. Her throat was healthy and her heart and lungs normal. The pupils had been normal. A labyrinthine examination had revealed a normal reaction to alteration in the temperature of the vestibular canals and to rotary movements. Delayed reactions had suggested increased supratentorial pressure, but normal infratentorial pressure and examination of the fundus had revealed two diopters of œdema in both optic discs. The reflexes had been sluggish. The Babinski reflex had not been present. Sensation had been normal. No reaction had been obtained to either the Wassermann or the Casoni test. X ray examination of the skull had revealed no abnormality and

lumbar puncture yielded clear fluid under slightly increased pressure. The fluid had been normal. The teeth had been removed under anæsthesia.

On June 4, 1926, Mr. Hurley had performed right subtemporal decompression. The *dura mater* had bulged as a result of considerable intracranial pressure. It had not been opened, but was punctured in several places to allow escape of cerebro-spinal fluid. The patient had improved steadily after the operation. Headache had ceased. Vision had improved and the papillœdema had disappeared.

Congenital Constriction of Limbs.

DR. B. HILLER presented a female patient, aged thirty-six years, who since birth had exhibited bands of constriction of the skin above the right wrist, at the proximal ends of the four outer fingers of the right hand, immediately distal to the right knee joint and at the right ankle joint.

The constrictions had gradually become tighter and had occasioned periodical attacks of numbness, pain, cyanosis and coldness in the parts distal to them. Amputation of the right foot had been performed seventeen years previously for threatened gangrene.

Three years previously and for a similar reason the leg was amputated at a point seven centimetres above the right knee joint. Shortly after the operation another constricting band had appeared just proximal to the end of the stump with the result that the distal tissues became periodically cyanosed and cold and at such times occasioned the patient much pain and tenderness. At a further operation performed six months previously much scar tissue and parts of both divisions of the sciatic nerve had been excised, with no resulting improvement.

The constrictions appeared to be due to fibrous contraction, limited to the subcutaneous tissue of the region, nowhere involving the muscles. On the left foot there were four toes only, the three outer being webbed. The patient complained frequently of pain, swelling and coldness in the left foot and ankle. The constriction above the right wrist had become more pronounced of late and the hand frequently became cyanosed and cold. When this occurred the patient complained of pain and "drawing sensations." No constricting band had at any time been present on the left side of the body.

EVENING SESSION.

The evening session was held at the Hotel Shamrock, after the visitors had been entertained at dinner by the members of the Bendigo Subdivision.

Treatment of Exophthalmic Goître.

DR. H. E. LOUGHRAN read a paper entitled: "The Treatment of Thyreoid Enlargement Including Exophthalmic Goître by Injections of Quinine and Urea Hydrochloride into the Thyreoid Gland" (see page 263).

DR. J. NEWMAN MORRIS, in congratulating Dr. Loughran on his paper, said that he had been much impressed by the results of the treatment he had detailed. The two patients Dr. Loughran had shown, provided striking evidence of the efficacy of the measures he had adopted. The results compared very favourably with those obtained by operative means and the treatment was apparently free from that anxiety which was inseparable from the surgery of exophthalmic goître. Dr. Loughran would accomplish much if he could establish a method of treatment of goître which would eliminate many of the serious and worrying operations which they were obliged to perform. One of the patients shown by Dr. Loughran still exhibited a little exophthalmos, but the same would be observed after a surgical operation. Exophthalmos, as was well known, was the last feature to disappear. He wished to ask Dr. Loughran how frequently he encountered difficulty in entering the thyreoid gland.

DR. LOUGHRAN replied that he had been fortunate in that the patients he had treated, had large goîtres. At the same time he was sure that he must have missed the gland occasionally. In this event no harm was done; at the worst an injection had been wasted. He would advise anyone commencing this method of treatment to select large goîtres at first.

DR. W. R. GROVES said that the results obtained by Dr. Loughran were very striking. He had not employed injections of quinine and urea hydrochloride so consistently as Dr. Loughran, but had had some experience of the injection of boiling water into the thyreoid gland. The difficulty he had always found was that by the time the injection was made the water was no longer boiling. He had treated one woman, aged fifty-two years, by injections of boiling water, but being dissatisfied with her progress, had given her one intrathyreoid injection of quinine and urea hydrochloride and then trusted to the natural retrogression of the thyreoid which might be looked for at this time of life.

DR. BURKE GAFFNEY said that in association with Dr. R. O. Douglas at the Bendigo Hospital he had attempted the treatment of goître by injections of boiling water into the thyreoid gland. In order to overcome the difficulty mentioned by Dr. Groves they had exposed the gland so that the injection might be made with as little loss of time as possible. Their results, however, had not been very successful.

DR. A. NORMAN MCARTHUR agreed that the results in the two patients shown by Dr. Loughran were remarkably good. With Dr. Morris he felt that any method of treatment which promised to obviate operations for goître, so terrifying to the patient and full of anxiety to the surgeon, should be given a thorough trial. Dr. Loughran had touched on the relationship between dysthyreoidism and disturbed menstruation. Amenorrhœa was frequently observed both in hypo- and hyperthyreoidism. The administration of glandular extracts sometimes improved the menstrual function, but as a rule only temporarily. There was a strong association between the thyreoid gland and the ovary and possibly the pituitary body. Knowledge was vague on the precise manner in which the thyreoid and the ovary interacted, but it was certain that an important relationship between them existed.

DR. J. RAMSAY WEBB said that he would have liked to have seen more examples of true Graves's disease among the patients treated by Dr. Loughran. He thought the explanation offered of the rationale of the treatment was correct and that the changes which supervened in the gland, were similar to those induced by X rays. It appeared probable that if operation should become necessary on account of the failure of the treatment by injection of quinine and urea hydrochloride, the same operative difficulties would be added as had been experienced after operation.

Peritonitis.

DR. W. R. GROVES read a paper entitled: "The Treatment of Peritonitis" (see page 260).

MR. VICTOR HURLEY said that Dr. Groves had introduced a very interesting subject in the treatment of peritonitis. The method advocated by Dr. Groves was certainly not the generally accepted practice, although he personally had employed it to some extent in recent years. He confessed that although he generally resorted to it with much nervousness and in patients who were desperately ill, he had observed one or two striking recoveries.

In the average case of appendicitis and in the presence of a degree of local peritonitis he did not now worry so much as formerly about the necessity for action of the bowels on the second or third day. He thought that too great stimulation of the bowels involved the double disadvantage of lack of rest to the patient and depletion of body fluids. If the patient were uncomfortable a small glycerin enema or an injection of one hundred to one hundred and twenty cubic centimetres of milk and treacle would generally suffice to give relief.

At the present time postoperative distension was still made the occasion for a second laparotomy and the performance of enterostomy and it must be granted that the results generally admitted of much improvement. He did not think that anybody performed the *ileus duplex* operation advocated by Sampson Handley, the general view being that it was a procedure altogether too drastic and exhausting for a patient who was very ill. The administration of fluids by various channels was very helpful although he was very chary of resorting to the

subcutaneous injection of saline solution. In spite of every care infection at the site of injection was prone to occur in patients exhausted by a septic illness and such infection was sufficient to determine the issue. He felt very doubtful about the suture of the aponeurosis of the external oblique muscle with a continuous unabsorbable ligature as advocated by Dr. Groves. He preferred to use interrupted sutures of catgut, drawn lightly together and at wide intervals. In the event of suppuration in the wound it was never necessary to remove such sutures, the insertion of a Spencer Wells forceps in the intervals between them being sufficient. What was substantially the method of treatment advocated by Dr. Groves he knew as the Ochsner treatment and he always gave it a place in teaching students.

DR. H. G. LOUGHRAN said that he could endorse all that Dr. Groves had said relative to the efficacy of the treatment of peritonitis advocated by him. Although on the first occasion on which he had employed it, he had been very nervous, he had adopted it in five patients altogether and all had got well.

DR. A. NORMAN MCARTHUR said that as a gynæcologist he was frequently called upon to deal with pelvic peritonitis. In latter years he had modified his technique in the direction of dispensing with drainage to a considerable extent. His procedure whenever possible was to shut off the upper portion of the abdomen with packs, mop out the pelvis, introduce iodoform and suture the abdominal wall without drainage. He then administered heroin hydrochloride 0·008 gramme (one-eighth of a grain) and gave further doses of 0·0054 gramme (one-twelfth of a grain) every four hours as long as the patient was in pain. He was convinced that forceful stimulation of the bowels was erroneous and considered that Dr. Groves was on right lines.

DR. H. DOUGLAS STEPHENS asked if Dr. Groves would apply his principles to young children. General purulent peritonitis in children could be considered in two classes, that complicating acute appendicitis and that complicating pneumococcal peritonitis. In the days before the practice of operating for appendicitis at sight became universal, general purulent peritonitis was seen much more frequently than at the present time. They saw many instances of local peritonitis, but comparatively few in which the infection had become generalized. In children acute general peritonitis was frequently due to pneumococcal infection. He had often said that if he could make the clinical diagnosis of pneumococcal peritonitis with confidence, he would not open the abdomen in the acute stage. When he found the appendix surrounded by purulent exudate he always inserted at least a strip of rubber glove to serve as a drain and in general he had not found the peritoneum in children as resistant to infection as it had been represented in adults.

He had not carried out the method of treatment detailed by Ochsner and used with such success by Dr. Groves. In the presence of abdominal distension, particularly if accompanied by vomiting, he felt that it was impossible to be sure whether the vomiting was occasioned by toxæmia or whether it was the result of ileus or obstruction from adhesions between coils of intestine. Under such circumstances he would be inclined to perform a second operation.

DR. GROVES in reply stated that the youngest patient he had treated for general peritonitis in the manner indicated was twelve years of age. He had not had an opportunity of treating pneumococcal peritonitis, but would regard the method he had described as appropriate to this condition.

Blood Sugar.

DR. BASIL CORKILL read a paper entitled "Blood Sugar."

Country Practice.

DR. W. R. GROVES read a paper entitled: "Recollections and Impressions after Twenty-four Years of Country Practice" (see page 265).

NOTICES.

A JOINT MEETING of the Queensland Branch of the British Medical Association and the Brisbane Division of the Institution of Engineers, Australia, will be held at the rooms of the latter body, Empire Chambers, Queen and wharf Streets, Brisbane, on Friday, March 4, 1927, at 8.15 o'clock p.m. A paper will be read by Mr. J. S. Just, M.I.E.(Aust.), M.I.E.E., M.Am.I.E.E., entitled: "A Plea for Greater Cooperation Between the Sciences of Medicine and Engineering in their Relation to Industry."

Medical Societies.

NEWCASTLE HOSPITAL CLINICAL SOCIETY.

A MEETING OF THE NEWCASTLE HOSPITAL CLINICAL SOCIETY was held at Newcastle Hospital on November 4, 1926. The members presented patients and discussed the conditions found.

Spastic Paraplegia.

DR. S. S. GARDINER showed a female child, aged four years. The child had first come under his observation twelve months previously.

There had been spasticity of the muscles of both lower extremities and a typical scissors attitude. The sole of the right foot had rested transversely across the dorsum of the left foot.

At operation the lumbar sympathetic cord had been divided on the right side and the lumbar sympathetic cord and *rami communicantes* had been divided on the left side.

The child had not walked before the operation. She was now able to walk across a room with very little aid from her parent.

Improvement was still taking place. The patient's intelligence was normal.

Cases for Diagnosis.

DR. A. T. ROBERTS brought the case of a female patient, aged seventy-four years, under the notice of the meeting.

Her illness had commenced in August, 1926. A painful swelling had appeared in the left face. Three weeks before admission a yellowish watery discharge had appeared. There was a large irregular swelling in the face and there were two sinuses discharging a yellowish watery pus. The whole of the structures of the cheek were involved and there was a fungating mass attached to the mucous membrane of the mouth.

A Wassermann test performed on the patient's blood had failed to yield a reaction. Microscopical examination of sections of a snipping from the tumour had not revealed any cell formation typical of epithelioma or actinomycosis. It was suggested that a chronic inflammatory mass originating from an infected tooth socket could not be totally excluded. Examination of the pus had failed to reveal the presence of actinomyces.

Oxycephaly.

DR. J. BOSTOCK showed two patients with oxycephaly.

The first patient was a female child, aged twelve years, with an intelligence quotient of 60. Dr. Bostock demonstrated the characteristic features of the condition, the broadened face, depressed nose, eyes set wide apart, "steeple shaped" skull and flattening above the super orbital margins. A skiagram of the skull revealed characteristic digitation in the bone and thickening of the bone itself. A moderate degree of exopthalmos was present. Skiagrams were shown to demonstrate the bony union which was present between the clavicle and scapula and the tips of the phalanges of the fingers and hands. Complete syndactylism was present in both feet. The thumb and forefinger of the right hand were separate, the other three fingers being joined by thick webs of skin. On the left hand the thumb alone was separate.

The second patient was a female child, aged fourteen years, an imbecile. Her intelligence quotient was 15. Dr. Bostock demonstrated the same characteristics in this patient. Exophthalmos was much more evident than in the first patient. There was severe strabismus and a gross myopic refractive error. There was the characteristic syndactylism of the hands and feet. The thumbs alone were free in each hand and all the digits of the feet were

united. A family history was unobtainable. This patient exhibited complete anosmia.

Rodman's Radical Amputation of the Breast.

DR. T. HAMILTON, in the absence of Dr. J. R. Leslie, presented a patient who had undergone an operation of amputation of the breast for scirrhous carcinoma. The patient, aged forty-five years, had complained of the presence of a lump in the upper and inner quadrant of the left breast in August, 1926. A preliminary operation had been performed and the lump had been excised. A pathological examination had been performed and a diagnosis of scirrhus had been made.

One week later a radical operation had been performed according to the procedure outlined by Rodman.

A linear incision had been made 2·5 centimetres below the clavicle and parallel with the sulcus between the *pectoralis major* and deltoid muscles. The axilla had been exposed by this incision and the contents had been removed. After the division of the muscular insertions, the whole of the thorax had been cleared.

A racquet-shaped incision commencing at the mid-line of the previous incision and encircling the whole breast had been made. The breast itself had then been removed in the usual manner.

The advantages claimed for this method were: (i.) It minimized shock and bleeding; (ii.) if advanced disease were found in the glands of the axilla, the operation could be terminated at once.

Pott's Disease.

DR. F. W. D. COLLIER drew attention to a man, aged twenty-eight years, who had been ill for two years. There was no history of previous illness or injury. The family history was good.

In 1924 he had complained of pain in the "middle of the back" and "pain in the shoulder blades." The pain had been worse when lifting any weighty object. At times he had been free from pain for several weeks but it had returned. During the last twelve months the pain had been more acute in character and had radiated around the thorax, over the area supplied by the sixth, seventh and eighth thoracic segments of the spinal cord. He had experienced more acute pain when walking down stairs or when riding in a 'bus over a rough road. There had been a loss of weight amounting to over six kilograms during the two years.

An examination had revealed evidence of early epididymitis. There were no urinary symptoms and the urine itself was normal.

No abnormalities of sensation had been found. The knee jerks were slightly exaggerated and the other reflexes were apparently normal.

The patient walked with his head held forward and his shoulders stooped. A definite prominence was observed over the region of the eighth dorsal vertebra. Pressure on the transverse process of this vertebra produced slight pain. An injection of one cubic centimetre of a 1 in a 1,000 solution "O.T." had caused the temperature to rise to 38·9° C. (102° F.) and had also produced a local and focal reaction. A skiagram revealed a complete collapse of the eighth dorsal vertebra and partial erosion of the seventh and ninth vertebræ. A large shadow suggestive of an abscess cavity was seen anterior to the bodies of these three vertebræ. A diagnosis of Pott's disease had been made.

The subsequent discussion centred around the question of the relative value of surgical treatment by means of Albee's method of bone splinting and treatment by means of immobilization and heliotherapy. The concensus of opinion favoured the method of bone splinting in this particular instance.

Correspondence.

THE COLLEGE OF SURGEONS OF AUSTRALASIA.

SIR: There is in your issue of January 22, 1927, a report of a meeting of surgeons interested in the formation of a College of Surgeons in Australasia, in which Dr. W. N. Robertson is reported to have said in effect that the majority of surgeons and specialists in Queensland favoured the formation of a College of Surgeons. And your report of the doctor's speech goes on: "Two were divided, and one of these (the oldest surgeon) was very keen on foundation by the British Medical Association."

As most Queensland readers (especially those who have not seen me) will regard me as the "oldest surgeon" referred to by Dr. Robertson I wish to make it clear that I do not favour the formation of the College of Surgeons by the British Medical Association. I have repeatedly said that such a proposal would for various reasons not be in the interests of the British Medical Association. On the other hand, I have repeatedly asserted that the primary delegates to the temporary council of the proposed College should have been accredited in the first instance at a meeting of the Branch in Queensland.

I should be glad if you would publish this disclaimer as early as possible.

E. S. JACKSON.

St. Helen's Hospital, South Brisbane,
January 28, 1927.

ANOTHER MATTER OF GREEK.

SIR: Greek seems no longer to be one of the accomplishments of our profession. A short time ago I began to learn Greek in order to be able to help my son at school. I inquired of quite a number of colleagues about the method I should adopt. But not one in fifty took the slightest interest in Greek. Indeed, one man suggested that, perhaps, I had better consult Chisholm Ross.

Yours, etc.,

"GREEK IN EMBRYO."

Sydney,
January 31, 1927.

THE INTRODUCTION OF ANÆSTHETICS TO AUSTRALIA.

SIR: I wish to thank Dr. Norman J. Dunlop for his thoughtful and instructive article "An Essay Relating to Anæsthetics and their Introduction to Australia and Tasmania," published in THE MEDICAL JOURNAL OF AUSTRALIA, January 29, 1927.

One point, however, needs clearing up. Dr. Dunlop speaks of Dr. David Waldie, of Linlithgow, as recommending chloroform to J. Y. Simpson. In the life of Simpson by H. Laing Gordon we are told the suggestion came from Mr. Waldie, a native of Linlithgowshire settled in Liverpool as a chemist. Dudley Buxton tells us that "Sir James Y. Simpson not wholly satisfied with ether in obstetric practice asked Mr. Waldie, the Master of the Apothecaries' Hall, of Liverpool, if he, as a practical pharmacist, knew a substance likely to be of service in producing anæsthesia." Hewitt, Gwathmey, Webster and others speak of Waldie as a chemist of Liverpool, not as a medical man. Silk speaks of him as an Edinburgh chemist. The old Apothecaries' Hall in Liverpool was often pointed out to me when a student as the place where Waldie the chemist worked.

If Waldie was a medical man, the books on anæsthetics must be corrected and give him his full title.

Yours, etc.,

GILBERT BROWN.

Medical Prizes.

THE GIFFORD EDMONDS PRIZE IN OPTHALMOLOGY.

THE attention of medical practitioners is drawn to an advertisement appearing in this issue in regard to the Gifford Edmonds prize in ophthalmology. This prize is offered for the best essay on a subject dealing with

ophthalmology. It is open for competition to any British subject holding a medical qualification. The subject for the next essay is "The Causation and Differential Diagnosis of Proptosis." Preference will be given to essayists who give evidence of original work on the subject. The last day on which the next essay will be received is December 31, 1928. The prize is £100. Medical practitioners interested in this work are advised to write for full particulars to The Secretary, Royal London Ophthalmic Hospital (Moorfields Eye Hospital), London, E.C.1.

Obituary.

ROBERT BERNARD PEARSON MONSON.

WE regret to announce the death of Dr. Robert Bernard Pearson Monson which occurred at Sydney on February 13, 1927.

Books Received.

ENZYMES: PROPERTIES, DISTRIBUTION, METHODS AND APPLICATIONS, by Selman A. Waksman, M.S., Ph.D., and Wilburt C. Davison, M.A., M.D.; 1926. Baltimore: The Williams and Wilkins Company. Royal 8vo., pp. 376. Price: $5.50 net.

GENIUS: SOME REVALUATIONS, by Arthur C. Jacobson; 1926: New York: Greenberg. Demy 8vo., pp. 160. Price: $2.50 net.

Medical Appointments.

Dr. E. W. Fairfax (B.M.A.) has been appointed an Honorary Visiting Physician to the Waterfall Sanatorium, New South Wales.

* * * *

Dr. Charles George McDonald (B.M.A.) has been appointed an Acting Member of the Board of Official Visitors to the Cook's River Mental Hospital, Sydney.

* * * *

Dr. G. F. Read has been appointed an Official Visitor to the Mental Diseases Hospital, New Norfolk, Tasmania.

* * * *

Dr. Hugh Armstrong has been appointed a Member of the Board of Optical Registration, Tasmania.

* * * *

Dr. John Herbert Blackburn (B.M.A.) has been appointed Public Vaccinator at Dookie, Victoria.

* * * *

Dr. William A. Collopy (B.M.A.) has been appointed Public Vaccinator at Merino, Victoria.

* * * *

Dr. Julian Johnstone Searby (B.M.A.) has been appointed Public Vaccinator at Woodend, Victoria.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xxii.

ADELAIDE HOSPITAL: (1) Pathological Registrar. (2) Medical Registrar.

ALFRED HOSPITAL, MELBOURNE: Medical Vacancies.

CHILDREN'S HOSPITAL, CARLTON, VICTORIA: Medical Vacancies.

DEPARTMENT OF PUBLIC INSTRUCTION, VICTORIA: School Medical Officer.

MARRICKVILLE DISTRICT HOSPITAL, SYDNEY: Honorary Radiographer.

MELBOURNE HOSPITAL: Medical Vacancies.

ROYAL HOSPITAL FOR WOMEN, SYDNEY: Junior Resident Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	Contract Practice Appointments at Ceduna, Murat Bay and other West Coast of South Australia Districts.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia. Yarloop Hospital Fund.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

FEB. 23.—Victorian Branch, B.M.A.: Council.
FEB. 24.—South Australian Branch, B.M.A.: Branch.
FEB. 25.—Queensland Branch, B.M.A.: Council.
MAR. 1.—Tasmanian Branch, B.M.A.: Council.
MAR. 2.—Victorian Branch, B.M.A.: Branch.
MAR. 2.—Western Australian Branch, B.M.A.: Council.
MAR. 3.—South Australian Branch, B.M.A.: Council.
MAR. 4.—Queensland Branch, B.M.A.: Branch.
MAR. 8.—Tasmanian Branch, B.M.A.: Branch.
MAR. 8.—New South Wales Branch, B.M.A.: Ethics Committee.
MAR. 10.—Victorian Branch, B.M.A.: Council.
MAR. 11.—Queensland Branch, B.M.A.: Council.
MAR. 15.—Tasmanian Branch, B.M.A.: Council.

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